MINISTRY OF NATURAL RESOURCES

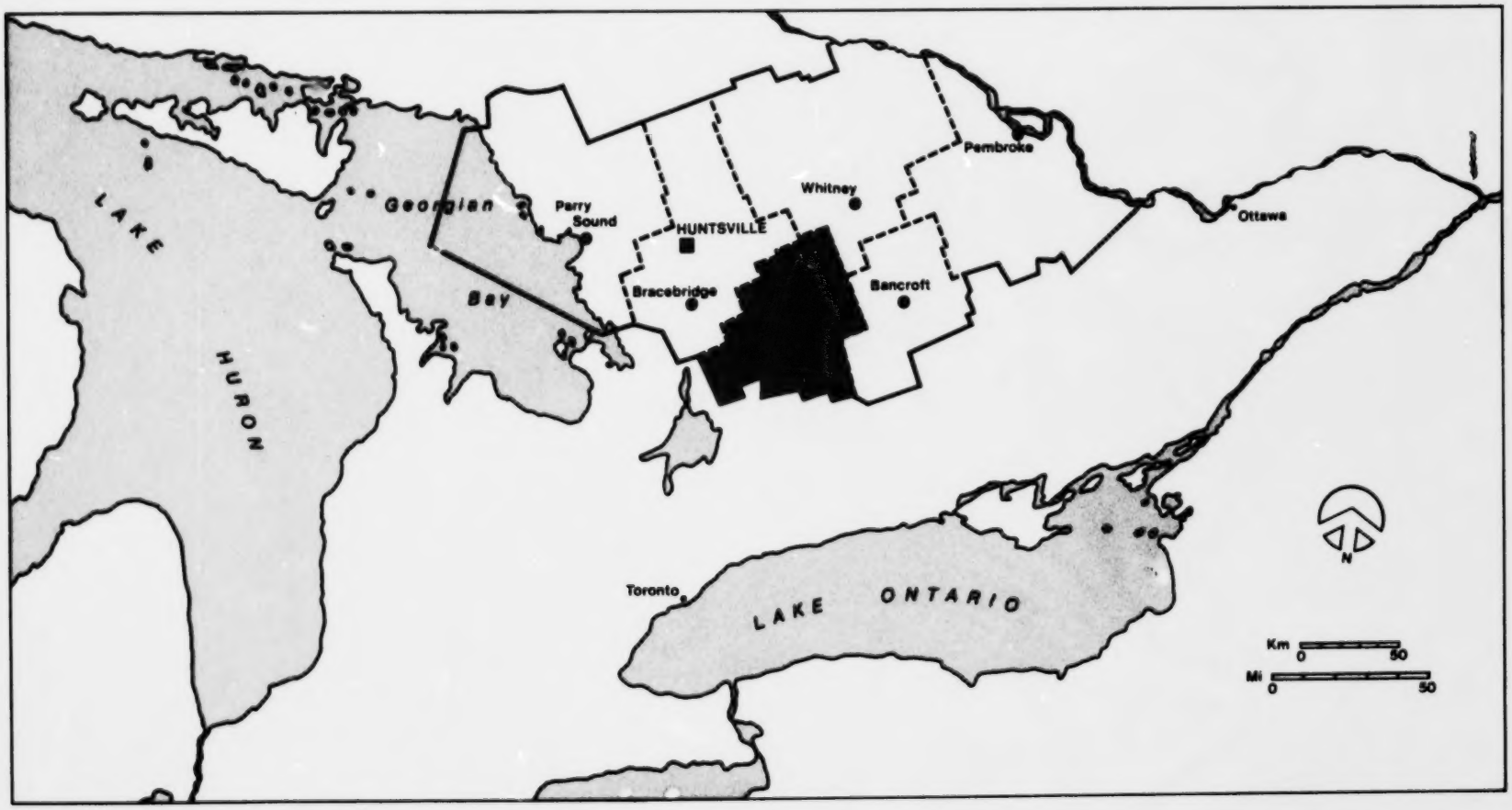
Minden District

LAND USE GUIDELINES

Ontario
Ministry of Natural Resources
Hon. Alan W. Pope
Minister
W. T. Foster
Deputy Minister

1983

MINDEN DISTRICT
ALGONQUIN REGION



FOREWORD

The Ministry of Natural Resources has a primary responsibility for the management of the province's natural resources, in particular those related to resource development and outdoor recreation.

This document will serve as a design for integrated resource development in the Minden District. It is also intended to provide others with an understanding of the ministry's mandate and its programs which rely on both Crown and private lands for success.

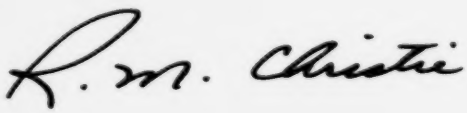
To ensure an integrated approach the *Minden District Land Use Guidelines* identify where and in what manner the ministry may use Crown land, and to what extent it may wish to suggest uses of private land, in working toward the achievement of ministry objectives.

For Crown land the ministry must consider the land and water requirements for both its own programs and for those of other government agencies. This will require ongoing liaison with these other agencies. The ministry will continue to consult with private landowners and local municipalities, since the latter have the responsibility for control of private land use.

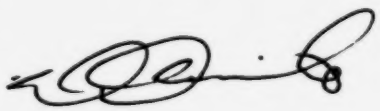
The program targets and approaches outlined in this document follow the overall direction outlined in the ministry's *Southern Ontario Co-ordinated Program Strategy.* The *Land Use Guidelines* may serve as one of the sources of information for ministry involvement in the planning process of municipalities and other agencies. It is recognized, however, that this document has no legal status.

Planning is a continuous process and must be responsive to changing needs, information and technology. Thus, the targets and strategies presented in this document are subject to revision based on such factors as changes in government policy, new or refined resource information, and significant changes to land use in other planning documents. To accommodate changes, the *Land Use Guidelines* will normally be reviewed every ten years and will involve full public consultation.

Comments may be addressed to the District Manager at any time.



Regional Director
Algonquin Region



District Manager
Minden District

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I INTRODUCTION

The Ministry of Natural Resources is concerned with the use of natural resources for both recreation and resource development. It is responsible for maintaining and, where possible, increasing the supply of renewable resources such as fish, wildlife, fur, timber, and for providing recreational opportunities. It is also responsible for the wise management of non-renewable resources such as sand, gravel and minerals. The ministry is charged with the responsibility to manage the province's natural resources for the best long-term social and economic return while keeping adverse environmental effects to a minimum.

To this end, the goal of the ministry is:

- to provide opportunities for outdoor recreation and resource development for the continuous social and economic benefit of the people of Ontario and to administer, protect, and conserve public lands and waters.

The goal is achieved through three broad program objectives:

Resource Production

- to provide for an optimum continuous contribution to the economy of Ontario by stimulating and regulating the utilization of available supplies of fish, furbearers, minerals, and trees by resource products industries.

Outdoor Recreation

- to provide from public lands and waters and to encourage on other lands and waters:
  - a wide variety of outdoor recreational opportunities accessible to, and for the continuous benefit of, the people of Ontario;
  - the identification and conservation of unique or representative physical, biological, cultural, and historical features of the province; and
  - a continuous contribution to the economy of Ontario from tourism and its related industries;

Land and Water Management

- to facilitate the orderly development, and conservation of Ontario's land and water resources for the continuous social and economic benefits for the people of Ontario; and
- to prevent loss of life, and to minimize social disruption, property damage and loss of natural resource values from forest fires, floods, erosion, earth slippage and abandoned mines.

The Minden District is one of six administrative districts in the Algonquin Region. It covers an area of 4,745 square kilometres (1,832 square miles). About 69 percent of the land area is in private ownership, the rest is Crown land. (See Map 1.) It includes a portion of the Leslie M. Frost Natural Resources Centre, an outdoor education centre established by the ministry in 1971.

The *Land Use Guidelines* have been prepared for resources on both Crown and private lands. On Crown land, it identifies how the Ministry of Natural Resources will manage resources. On private land, it identifies the significance of the resource base, the role that the local resource plays in meeting demand, and the contribution that resources could make to the local economy and the economy of the province.

The *Land Use Guidelines* have no legal status. The planning control of private land in municipalities is exercised by those municipalities under the authority of the *Planning Act* administered by the Ministry of Municipal Affairs and Housing.

The ministry recognizes that private landowners, other government agencies, municipalities, conservation authorities and interest groups are key partners in any effort to achieve effective and coordinated resource management. The ministry will continue to work with these groups, especially with municipalities, through the ministry's plan input and review program to ensure that resource values are considered in local planning documents.

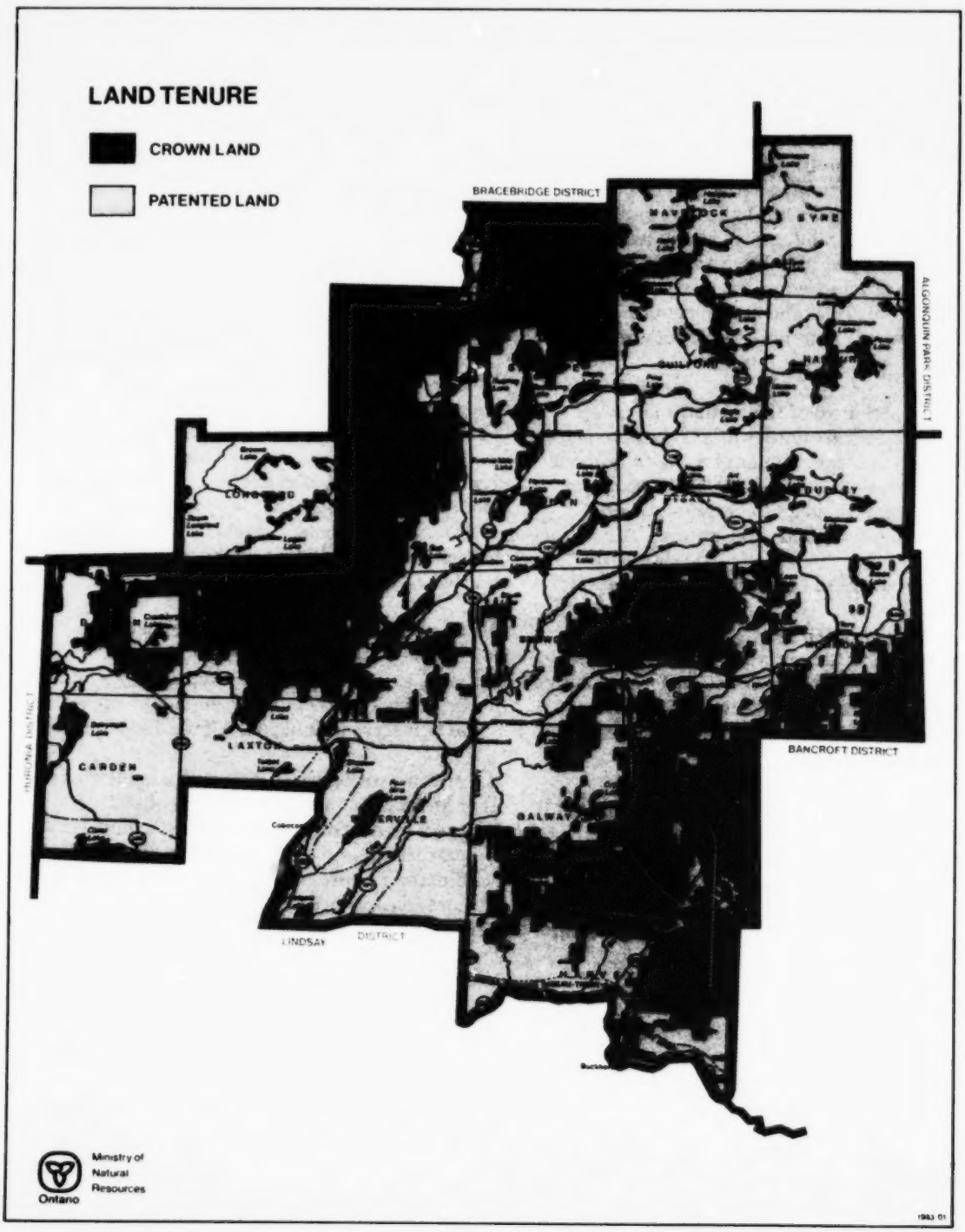
There will be instances when the ministry and others will have different intentions for the same area. When such situations are identified, the ministry will enter into negotiations to arrive at an acceptable solution.

MAP 1

MINDEN DISTRICT

M.N.R. Administrative District
County
Township
Community
Provincial Highways
Railways

5 0 5 10 15 20 Kilometres
5 0 5 10 15 Miles



The way in which the ministry hopes to work with municipalities, conservation authorities, and others (for example, the Canada-Ontario Rideau-Trent-Severn Agreement Board, and the Ontario Ministry of Agriculture and Food) is outlined in the final section of this report.

To determine how best to manage natural resources to meet its overall goal and objectives, the ministry has undertaken a planning process that includes: the identification of specific program objectives and targets; the collection and analysis of appropriate background information; the identification and evaluation of optional strategies; the preparation of a draft strategy; and finally the preparation and approval of final *Land Use Guidelines*.

The *Minden District Land Use Guidelines* have been prepared within the framework of a policy statement for southern Ontario referred to as the *Co-ordinated Program Strategy*. This statement identifies the overall ministry objectives and targets and gives general direction for ministry planning and resource management.

Two elements of the planning process require particular attention, the use of targets and the ministry's public consultation process.

The ministry has established general objectives for each of its programs. These have been quantified and stated in terms of a target and also expressed in terms of a time frame for attainment.

Targets identify what results are expected within a planning period to contribute toward achievement of the overall objectives. Targets also enable the ministry to assess the degree to which program objectives are being met.

Targets will not be met immediately, rather, the intent is to aim for target achievement over the planning period.[1] It is recognized however, that a number of factors may affect target achievement including:

- validity of the original assumptions on which the target was based;
- legislative approval of necessary funding and staffing required to carry out the level of resource management on which target achievement is based;
- changing economic and social conditions on a local or provincial basis;
- new or improved inventory and information which could result in a change of the original estimates; or
- a more thorough analysis of original information.

Where there are changes in targets, whether for the above or other reasons, the document will be amended accordingly. The *Land Use Guidelines* are best viewed as a working paper which will be subject to considerable review and re-evaluation as the ministry proceeds with application.

Public involvement in the ministry's southern Ontario planning program began with the development of the *Southern Ontario Co-ordinated Program Strategy*. Government agencies, counties, and interested groups and individuals were consulted in the preparation of this statement.

Public consultation in the preparation of the *Minden District Land Use Guidelines* began with the holding of 'open houses' in November of 1980. At that time the public was asked to comment on the accuracy of the ministry's information and to provide any additional knowledge they had of the planning area and raise any problems or issues they felt should be addressed during the process.

In July, 1982, a draft *Minden District Land Use Strategy* was released. In August, additional open houses were held to explain the direction proposed in the *Strategy* and to invite public comment. Meetings were also held with municipalities and interest groups at their request. Many verbal and written comments were received as a result of these meetings.

Based on the analysis and evaluation of all the public input received, this document was prepared.

Copies of all comments received are available for viewing in the Minden District office, the ministry's main office public reading room and Legislative Library at Queen's Park. Details of the public consultation program are found in Appendix A of this report.

Generally, the direction which has been established by the ministry in Minden District recognizes a moderate rate of economic growth related to resource industries, while maintaining or improving the quality of resource, recreational,

(1) The planning period for all programs is 1980 to 2000, except for forestry in which the planning period extends from 1980 to 2020.

and tourism opportunities provided in the district. It recognizes that economic growth is in large measure, contingent upon maintaining the significant recreational values of the area.

Achievement of ministry objectives will require a significantly increased management effort on Crown land in Minden District. The contribution from private land must also be substantially increased. This requires a greater ministry emphasis on the provision of assistance to private landowners.

This section outlines the general policies, established at a provincial level, which will be practised or supported by each program of the ministry in Minden District. These policies provide the general principles to guide the ministry's resource management efforts. They apply to all programs, and are not specific to any one land area.

A: integrated resource management

1. OBJECTIVE

Programs will be integrated to ensure the efficient use of land and water to achieve ministry objectives.

2. DISCUSSION

The area of land and water in the planning area suitable and available for achievement of ministry objectives is limited. As a result, many activities must be carried out on the same area. Exclusive use of large areas for single purposes is generally not possible, although in selected instances it may be necessary.

Resource analyses have demonstrated that all targets assigned to the Minden District are achievable on the land base available.

3. PROGRAM STRATEGY

- apply the concept of multiple use to land and water management as follows:
  - normally require or encourage two or more compatible activities on the same major area concurrently or sequentially over time; and
  - recognize that, in some circumstances, management of areas for a single purpose such as extraction, protection or recreation is necessary;
- prepare *Land Use Guidelines* to provide direction for resource management planning;
- ensure that each program contributes, to the extent possible, to the achievement of all ministry objectives. Individual area management plans, including water management plans, will be directed to achieving as many ministry objectives as possible to ensure integrated management and increased efficiency; and
- permit interim use of candidate provincial parks providing park values are protected. Uses and facilities which complement the achievement of park objectives will be encouraged; uses which have no significant negative impact on the long term achievement of park objectives will be permitted with judicious controls; and uses which would conflict with the long-term achievement of park objectives will be prohibited.

B: public safety

1. OBJECTIVE

The ministry will seek to eliminate loss of life and to minimize property damage and community disruption resulting from floods, erosion, earth slippage and forest fires.

The ministry will seek to eliminate injury and loss of life from hazards around abandoned pits, quarries, and mine shafts.

The ministry will promote the safe pursuit of outdoor recreation and resource production activities.

2. DISCUSSION

In Minden District, the first objective is met by the ministry in cooperation with municipalities, other provincial ministries, the Kawartha Region Conservation Authority and Parks Canada, through efforts in stream flow forecasting, contingency planning, emergency response, water regulation, forest protection, and through input to municipal plans and by-laws. The regulatory flood for identification of flood plains in Minden District is defined as that produced by a storm equivalent to that which occurred in Timmins in 1961 or the 1:100 flood,[1] whichever is greater.

The Ministry of Natural Resources is responsible for forest fire management in Ontario. This responsibility is shared with municipalities, landowners, and resource users.

Fire has always been a significant factor in the forests of Ontario and will continue to have an impact on people and their environment. Forest fire management is an integral part of land and resource management.

The fire management program performs a support function that provides expert knowledge and specialized services in matters of fire control and fire use within and outside the ministry. These services relate to preventing the occurrence of wild fire, ensuring that each fire in the district will receive a response, controlling wild fires that threaten values, and using prescribed fire as an approved management technique.

Forest fire protection is provided by the ministry, or by municipal agencies where they have the capability. The ministry can play a significant role in developing municipal expertise in improving fire safety, and use of fire and emergency planning.

3. PROGRAM STRATEGY

In conjunction with other agencies:

- ensure that new development avoids areas prone to flooding, erosion and earth slippage or occurs only with adequate protection and safeguards;
- participate in contingency planning, flood forecasting and provision of remedial works, such as dams and channelization, where development already exists within hazardous areas;
- participate in the mapping of flood plains and other hazardous sites in developed and developing areas;
- suppress wild fires in the district based on the following priorities: human safety, public works, private and public property, and natural resources;
- prepare and implement fire management plans in the fire region;
- develop cooperative fire prevention and control agreements with municipalities, railways and forest industries;

(1) In the Timmins storm of 1961, 19.3 centimetres (4.0 inches) of rain fell over a watershed of 10.4 square kilometres (4.01 square miles) in a period of 12 hours. The 1:100 year flood is a periodic flood of a magnitude having a recurrence interval of once in every 100 years.

- ensure that development and resource extraction activities in forested areas are designed to reduce the possibility of fire spread;
- act as the lead agency in a planned program for response to fire and flood emergencies;
- provide hunter safety training and trapper education programs; and
- ensure adequate safety measures are provided at abandoned pits, quarries and mines.

C: environment

1. OBJECTIVE

The ministry will conduct its activities in an environmentally responsible manner.

2. DISCUSSION

The ministry is one of several agencies which has a legislated responsibility to maintain an acceptable environmental quality for the people of Ontario.

Achievement of ministry program objectives is contingent upon maintaining a satisfactory environment through responsible management. Of particular concern in this regard is the potential effect of acid rain. This concern is greatest on the Precambrian Shield where lakes and soils have limited capacity to buffer the effect of acid rain.

The ministry recognizes the importance of wetlands in the total environment. A wetland policy will be issued by the ministry in the near future.

All programs of the ministry share in the responsible management of natural resources. Renewable resources including forests, fish, and wildlife, are managed on a biologically sound basis. Non-renewable resources such as mineral aggregate are protected from incompatible land uses and are managed such that remaining resources are available for future demands. Where environmental impacts are inevitable, mitigation and rehabilitation measures are used. Ministry programs will be carried out consistent with the requirements of the *Environmental Assessment Act* where appropriate.

All programs also contribute to identifying and conserving unique, representative, or endangered physical, biological, cultural, and historical features of the province.

3. PROGRAM STRATEGY

- manage renewable resources on a biologically sound basis, to provide sustained benefits. To the extent appropriate, this will involve management of entire plant and animal communities rather than single species or products;
- manage non-renewable resources to meet current demands, giving attention to anticipated future needs. The ministry will encourage recycling and will discourage the use of high quality materials where lower quality materials would suffice;
- in conjunction with the Kawartha Region Conservation Authority and/or Parks Canada, manage and regulate watersheds, including groundwater recharge and source areas, valley lands, and waterfront areas;
- encourage consideration of all wetland values in municipal planning and the planning of other agencies;
- identify and protect the habitat of provincially rare and endangered animals and plants;
- consider areas identified by the public, as areas of interest in ministry planning and management;
- participate with other agencies in monitoring the effect of contaminants, including acid rain, on natural resources; and
- prepare and implement class and individual environmental assessments to meet the requirements of the *Environmental Assessment Act.*

D: energy

1. OBJECTIVE

The ministry will undertake its activities so as to contribute to the provincial energy objectives.[1]

2. DISCUSSION

There are several resources in the district which may contribute to provincial energy objectives. These include water power, potential uranium ores, wood residues, and other sources of fuelwood from forestry operations.

3. PROGRAM STRATEGY

- ensure that energy potential is considered before a permanent commitment is made to uses which exclude energy production;
- recognize wood as an acceptable energy alternative;
- determine the energy production potential of ministry operated dams; and
- implement a comprehensive ministry energy action plan.

(1) Provincial energy objectives are identified in "Energy Security for the Eighties: A Policy for Ontario", 1979, Ministry of Energy.

This section outlines the district's strategies for each program, and the basis upon which they were developed. It relates these strategies to the program's land using components, which are illustrated as general resource areas on Map 8 (back pocket).

The district's strategies have been integrated among the various program strategies, to identify the management requirements for each resource area.

A: forestry

1. OBJECTIVE

The objective for forestry in southern Ontario is to provide for an optimum contribution to the economy by forest-based industries consistent with sound environmental practices, and to provide for other uses of the forest.

2. TARGET

The forestry targets[1] in Minden District are:

- to produce an annual continuous supply of 326,000 cubic metres (11.5 million cubic feet)[2] of wood for industrial purposes by the year 2020 while maintaining the present diversity of forest products; and
- to make the maximum contribution from forest production to the achievement of the provincial energy target.

3. DISCUSSION

Within Minden District the annual productive capacity of the forest land base under enhanced management is 357,000 cubic metres (12.6 million cubic feet).

To provide for other uses of the forest, total production is reduced by 11 percent or 31,000 cubic metres (1.1 million cubic feet). The annual productive capacity of the remaining forest under enhanced management is 326,000 cubic metres (11.5 million cubic feet).[3]

The 11 percent reduction includes a 5 percent allowance for deer yards, 5 percent for modified management practices along waterways, roadways, and other recreational buffers and a 1 percent reduction to accommodate future disposition of land.

(1) Target and all calculations of forest productivity are expressed in terms of net merchantable volumes unless otherwise stated.
(2) The portion of this target to be achieved on the Frost Centre lands is 21,000 cubic metres (0.75 million cubic feet).
(3) This excludes part of Dalton, Digby, Snowdon, Carden, Laxton, Somerville and Lutterworth Townships, which have generally low timber values.

Productivity calculations are based on the 1960 forest resources inventory and are derived using the Ontario normal yield tables.

These calculations assume that 100 percent of the forested land base, for both Crown and private land, is available for forest management. It is estimated that over 70 percent of the wood needed to meet the needs of industry must be available from private land.

Forest areas of importance are illustrated on Map 2.

The *Land Use Guidelines* recognize that forest management on private lands is beyond the direct control of the Ministry of Natural Resources. The preference of individual private landowners may restrict the ministry's ability to achieve its forestry objectives and targets. Adjustments in the target may be required.

Achievement of the target assumes:

- the availability of private forested lands for forest management;
- a reliance on the present production forest, although reforestation of vacant farmland will be considered on suitable sites where economically feasible;
- an enhanced forest with improved stocking (density), and quality of trees; and
- improved utilization of forest products.

It is estimated that one half of the future production will be quality wood products (sawlog and veneer). The remainder will be lower quality products (fibre and fuelwood). The main industrial demand now and in the foreseeable future, however, will be for quality wood products.

In this regard, the traditional forest utilization within Minden District has been the production of high quality tolerant hardwood (sugar maple and associated species) sawlogs and veneer, and pine lumber sawlogs. These products are used for furniture components, kitchen cabinets, flooring and similar uses. Although these species are generally of high value, there is significant variation in the quality of individual trees. Lesser quantities of pulpwood and fuelwood have also been produced.

The forest industry in Minden District is beginning to utilize the intolerant hardwood forests (poplar and white birch). Although these forests do not present the same potential for quality production, they do present considerable opportunities to increase the overall forest yield.

The remaining forests of balsam fir, cedar, black spruce and tamarack represent generally small, isolated lowland stands. It is unlikely that an industry will be established in the foreseeable future to use this type of fibre.

4. PROGRAM STRATEGY

The ministry recognizes that forest management and protection should be directed toward the higher capability, more productive sites. It will work toward this direction in the long term. Within this context, the ministry will direct its efforts to the more productive sites in the following order of priority: Crown lands, agreement forests, and private land. Furthermore the program strategy is to:

Practice on Crown lands and encourage on private lands the following:

- the tolerant hardwood and pine forests will be managed for large diameter, high quality trees;
- slow growing, low value hemlock stands that are not critical to other program interests will be converted over a reasonable period to the associated hardwood species; and
- the intolerant hardwood forests will be managed to produce a high volume of wood.

Encourage municipalities to support the forestry objectives of these *Land Use Guidelines*:

- promote forestry as a permitted use in official plans on all forested lands required to meet the timber target;
- ensure that zoning by-laws do not place excessive setbacks on forestry activities where these occur in proximity to lands zoned for dissimilar uses; and
- encourage municipalities to pass tree cutting by-laws under the *Trees Act* to promote wise management and use of forest resources on private land and conserve existing forests.

Encourage private landowners to enter into agreements with the ministry under the *Woodlands Improvement Act*:

- firstly on better sites which provide immediate results;
- secondly, on better sites which will provide harvestable products within a 20 year period; and
- finally, on poor sites or those which will produce results in the very long term.

The ministry will not encourage agreements on sites where efforts will not produce a material improvement in the forest or do not contribute toward ministry objectives.

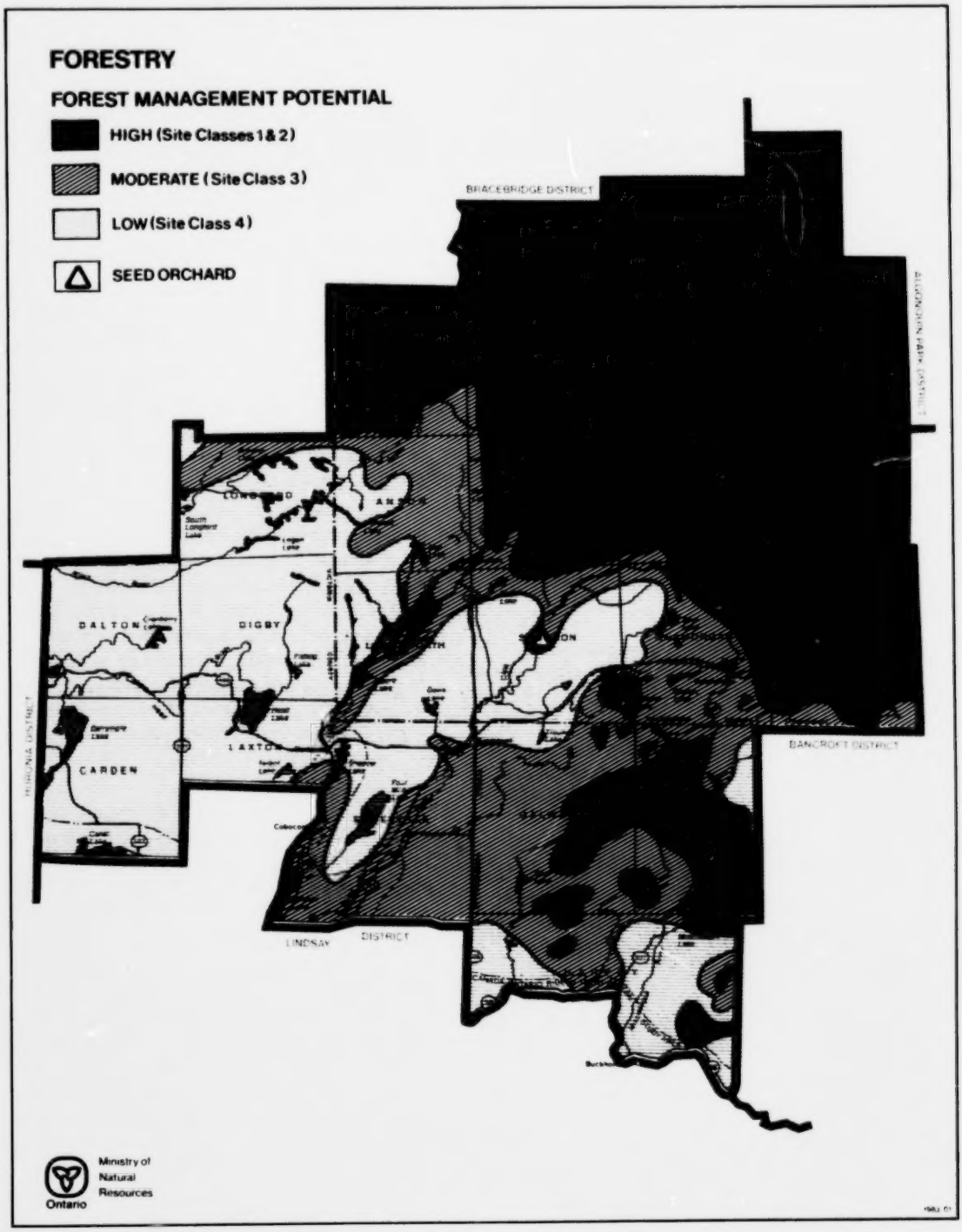
Within 120 metres (400 feet) of certain resource features and facilities, normal forest management

MAP 2

MINDEN DISTRICT

M.N.R. Administrative District
County
Township
Community
Provincial Highways
Railways

5 0 5 10 15 20 Kilometres
5 0 5 10 15 Miles



practices will be modified where necessary to maintain the recreation and tourism landscape, reduce resource conflicts, and protect wildlife and fisheries habitat. These modifications shall not be applied in a fashion which would result in a greater than 5 percent reduction in the district's total harvestable timber volumes. The guidelines for modified management areas (page 34) details how decisions will be made on forestry management activities within these areas.

B: mineral aggregate

1. OBJECTIVE

The objective for mineral aggregate production in southern Ontario is to meet the anticipated future demand with minimal disturbance to natural and cultural resources and the social environment.

2. TARGET

The target for mineral aggregate production in Minden District is to ensure a total cumulative supply of 17 million tonnes (18.8 million tons)[1] for the period 1982 to 2000.

3. DISCUSSION

The *Land Use Guidelines* provide for about a 1 percent annual growth in aggregate consumption to the year 2000. Aggregate production is primarily devoted to road and building construction. Since this sector is not expected to experience significant growth in the foreseeable future, the 1 percent rate of growth is considered a realistic basis for projection.

The total production of aggregate in the district to date is 14 million tonnes (15.2 million tons), 98 percent of which was produced from private land. This has involved about 180 hectares (450 acres) of land.

A further 46,500 hectares (115,000 acres) of land are estimated to be underlain by aggregate. (See Map 3.)

Achievement of the target will require the use of an additional 250 hectares (600 acres) of land.

This appears to indicate that there is a significant surplus of aggregate in the Minden District. However, this may be misleading because:

- the data base is generally of poor quality. It provides only an indication of the extent of the glacial features which have aggregate potential;
- detailed information on types and quality of supply is not generally available;
- supply may not be within economic hauling distances from centres of demand;
- quality aggregate may be limited;
- the ministry cannot guarantee continued use of present operations or level of production;
- significant lands underlain by potential aggregate are privately owned; and
- some municipalities have stringent and prohibitive controls for pit and quarry operations.

Mineral aggregate is a non-renewable resource. Since the demand for this resource will not cease in the year 2000, and for the reasons noted above, the target represents the minimum amount of aggregate for which the resource potential should be maintained.

Therefore, as a means of ensuring the maintenance of resource potential and availability of adequate aggregate resources, it may be necessary to protect

(1) The portion of this target to be achieved on the Frost Centre lands is 0.09 million tonnes (0.10 million tons) of sand and gravel.

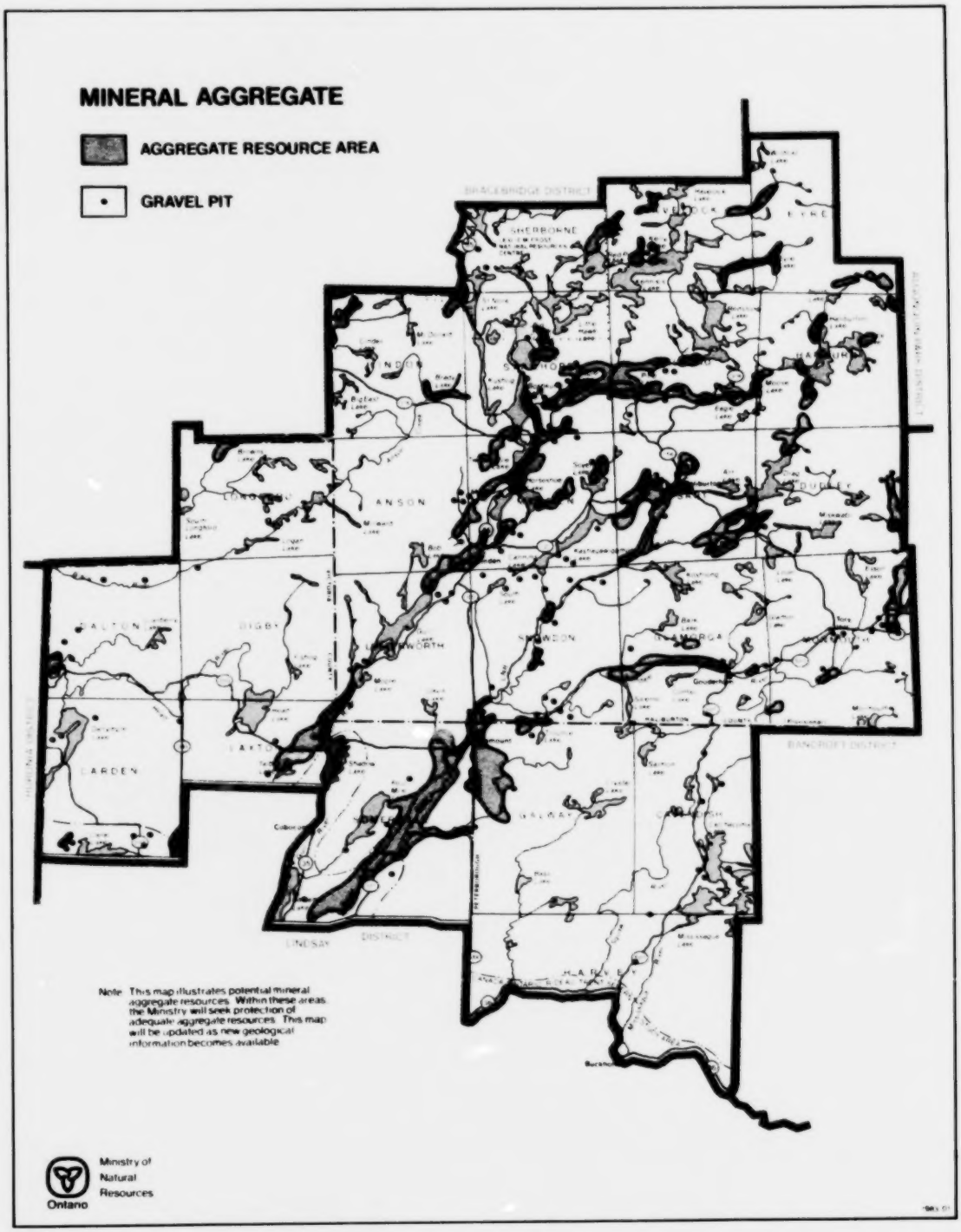
MAP 3

MINDEN DISTRICT

M.N.R. Administrative District
County
Township
Community
Provincial Highways
Railways

5 0 5 10 15 20 Kilometres
5 0 5 10 15 Miles

N



more aggregate than the target would suggest.

The mineral aggregate areas on Map 3 are in excess of anticipated future requirements. The ministry is not seeking absolute protection of all of these areas; rather, it is within these general areas that the ministry will seek maintenance of adequate resource potential. Where aggregate has been extracted, proper rehabilitation can restore the area to desired land uses such as agriculture, recreation, forestry, housing, commercial or industrial uses.

4. PROGRAM STRATEGY

Practice on Crown lands and encourage on private lands the following:

- protect existing pits and quarries and expansion areas where such pits have the capability of further production;
- rehabilitate all existing pits and quarries consistent with the expected sequential use of land;
- ensure that extractive operations have a minimum impact on adjacent land uses; and
- require operating standards to reduce the impact of existing and proposed operations.

To encourage municipalities to support the aggregate objective contained in this document:

- request the protection of potential aggregate resources required to meet the aggregate target, in all official plans through the plan input and review program. As such, the ministry is not seeking land use designation of large areas as "aggregate extraction"— rather, it is seeking designations such as agriculture and forestry, which provide for ongoing uses without closing the door to extraction in the future; and
- encourage municipalities to recognize in their zoning by-laws areas of potential aggregate, and place them in a category that encourages compatible uses (e.g. forestry and agriculture).

To assist in the proper management of aggregate resources:

- establish an evaluation and approval procedure for new Crown land pits and quarries which considers the need for extraction and the achievement of other program objectives;
- continue studies to refine demand estimates, and to determine the extent (including quality and quantity) of the mineral aggregate resource; and
- provide basic resource data and a definition of local and provincial needs, so that the areas required to meet those needs may be identified.

C: minerals and fossil fuels

1. OBJECTIVE

The objective for minerals and fossil fuels in southern Ontario is to provide for a strengthening of the contribution of these resources to provincial economic development and energy production.

2. TARGET

The target for mineral resources in Minden District is to keep open as much Crown land and unalienated mining rights as possible for mineral exploration and development.

Specific mineral and fossil fuel production targets cannot be established because of the difficulties in predicting market trends, and assessing resource potential, and because actual production is primarily a responsibility of the private sector.

3. DISCUSSION

There are no operating mines in the planning area. However, exploration activity has been relatively strong in the past.

The best potential for mineral exploration exists in the southeast portion of the district where geological conditions hold potential for the dis-

covery of uranium bearing ores. With continuing demands for energy, increased exploration activity can be expected.

Demand for industrial minerals (building stone, graphite, nepheline syenite) in southern Ontario, remains high. There is good potential for industrial minerals in the planning area; production in the future is anticipated.

Demands for many other minerals are expected to increase in the near future. Changing commodity values and technology, as well as increasing demands for alternative energy sources, may alter the relative importance of various minerals and therefore, the potential.

Map 4 illustrates the mineral potential of the district.

The major difficulty related to mineral exploration and development is the loss of lands available for exploration. This can result from:

- private ownership of surface rights, mineral rights or both;
- municipal restrictions placed on exploration and development activity; and
- the loss of Crown lands available for exploration, as the result of other required uses.

4. PROGRAM STRATEGY

The ministry will ensure mineral values are evaluated before a permanent commitment of significant areas of public land to non-mining uses occurs. In areas where significant non-mineral values exist, the ministry will, where possible, permit exploration under controlled conditions before a permanent decision is made.

Management of mineral resources will be directed toward:

- re-opening Crown lands withdrawn from staking, where these lands are not required for the achievement of other program objectives as stated in this document;
- opening acquired public lands to exploration, wherever possible;
- consider permitting mineral exploration and extraction in candidate parks under controlled conditions in accordance with the interim use policy outlined under integrated resource management (page 5);
- encouraging mining exploration in all areas which are not reserved under the *Mining Act*;
- identifying and evaluating potential mineral collecting sites;
- protecting representative and outstanding geological features; and
- encouraging the management and use of peat resources by:
  - preparing an inventory of potential peat resources;
  - encouraging and controlling exploration for peat through the issuance of work permits, quarry permits or licences of occupation; and
  - permitting development of viable peat deposits by way of a quarry permit or mining lease.

The ministry will encourage municipalities, other agencies and private landowners to support the mineral objectives contained in this document. To this end, the ministry will:

- encourage municipalities, through active participation in the plan input and review program, to support the mineral exploration and development process; and
- promote a better understanding by the public of the needs and benefits of the mining industry and conversely a better understanding by the mining industry of the needs of the public and other resource program considerations.

The ministry will encourage the disposition of surface rights only for those areas of land which are necessary for the efficient operation of the mining activity. This will be accomplished through negotiations with mining companies when applications for lease are made.

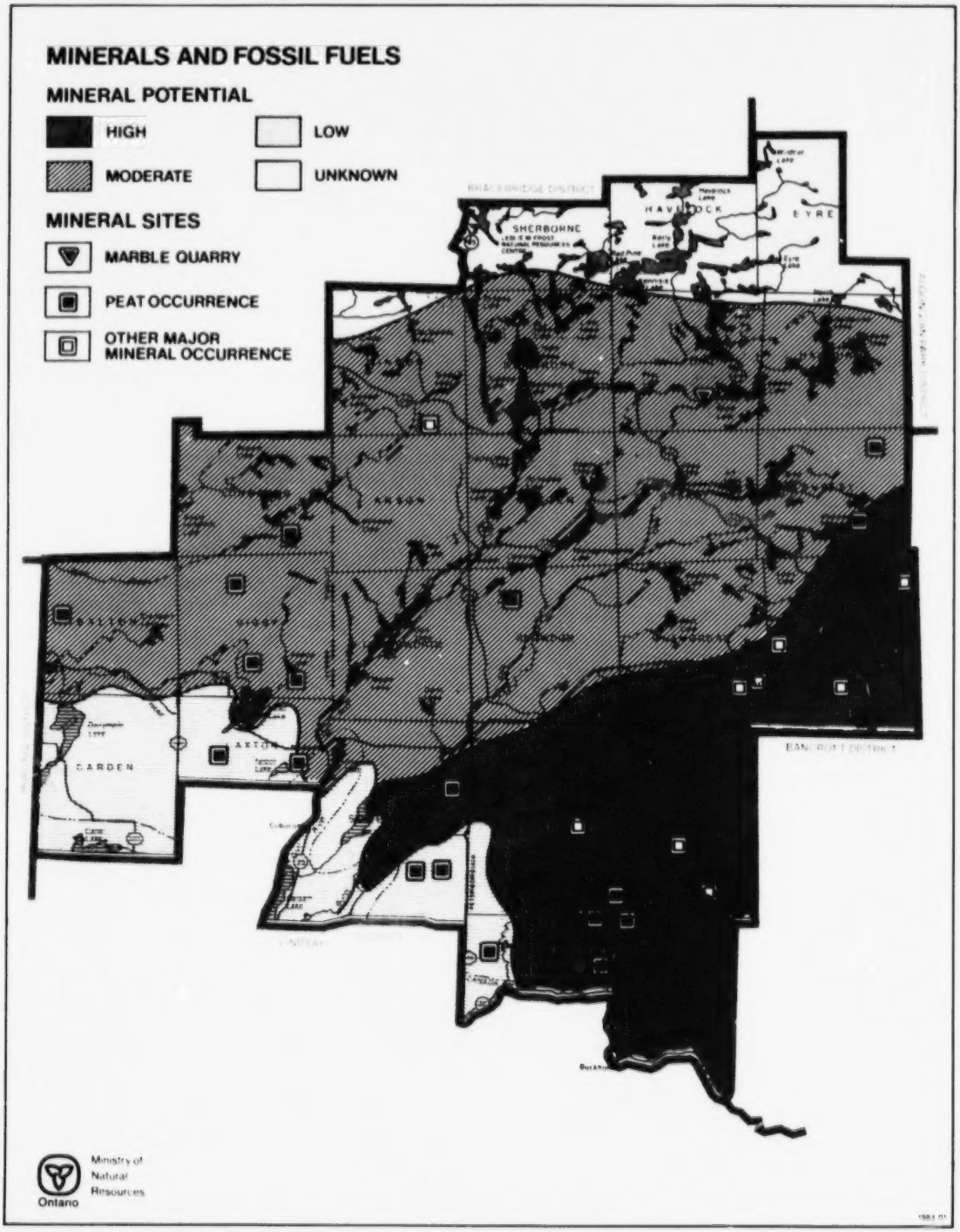
The ministry will promote a better public understanding of minerals and mining and contribute to the local tourist industry by encouraging hobby rock and mineral collecting.

MAP 4

MINDEN DISTRICT

M.N.R. Administrative District
County
Township
Community
Provincial Highways
Railways

5 0 5 10 15 20 Kilometres
5 0 5 10 15 Miles



D: fisheries

1. OBJECTIVE

The objective for fisheries management in southern Ontario is to provide opportunities for recreation and economic benefits consistent with the maintenance of healthy fish communities.

More specific objectives are:

Sport Fishing

- to meet demand within the limits of a wisely managed and rehabilitated resource.

Commercial Fishing

- to maintain a viable industry.

Bait Fishing

- to maintain current production; and

Provincially Rare and Endangered Species

- to prevent the extinction of any native species.

2. TARGETS

The targets for fisheries in Minden District are:

Sport Fishing

- to provide 1.49 million recreation opportunities by the year 2000.[1]

Commercial Fishing

- There is no assigned target for Minden District.

Bait Fishing

- to provide, at a minimum, the present level of harvest of 25,000 dozen bait fish; and

Provincially Rare and Endangered Species

- to ensure no native fish species become extinct.

3. DISCUSSION

Sport Fish

Allowable fish harvest was calculated for the 1429 lakes in the district. This was classified according to cold water (e.g. lake trout, brook trout and rainbow trout) and warm water (e.g. bass, walleye, and musky) species. The maximum allowable harvest was estimated to be 120,000 kilograms (264,000 pounds) of fish per annum, consisting of 7 percent lake trout, 7 percent brook and rainbow trout and 86 percent warm water species. The entire potential production is considered necessary to provide the 1.4 million angler opportunities per annum set out in the target. Map 5 illustrates the existing fisheries.

Present production is thought to equal potential. Further, the harvest of fish in the district is thought to be at or above the maximum allowable harvest. It is apparent from available data, that an over-harvest exists in the cold water fishery, especially for lake trout. On the other hand, an under-harvest situation exists in the warm water fishery. To meet the target, a shift in fishing pressure must take place from trout species to non-trout species. Additionally, cold water fishery resources have to be protected and, where necessary, rehabilitated.

Acidic precipitation has in recent years been perceived as a significant environmental problem. Research has shown that it can have a serious impact on fisheries. Consequently it can affect the achievement of targets. At present, about 23 percent of the district's lakes have a poor buffering capacity and may be affected by acid rain. In particular, cold water fisheries may be affected. The full implications of this problem are not as yet known. Research, through various public agencies and universities, continues.

Recreational fishing pressure can represent a significant stress, particularly to cold water fish species. For those lakes under severe pressure, it may be necessary to further regulate seasons, catch limits, etc.

It is estimated that 80 percent of the sport fisheries resource is accessible to the general public. The remaining portion of the resource is not readily available owing to private land restrictions.

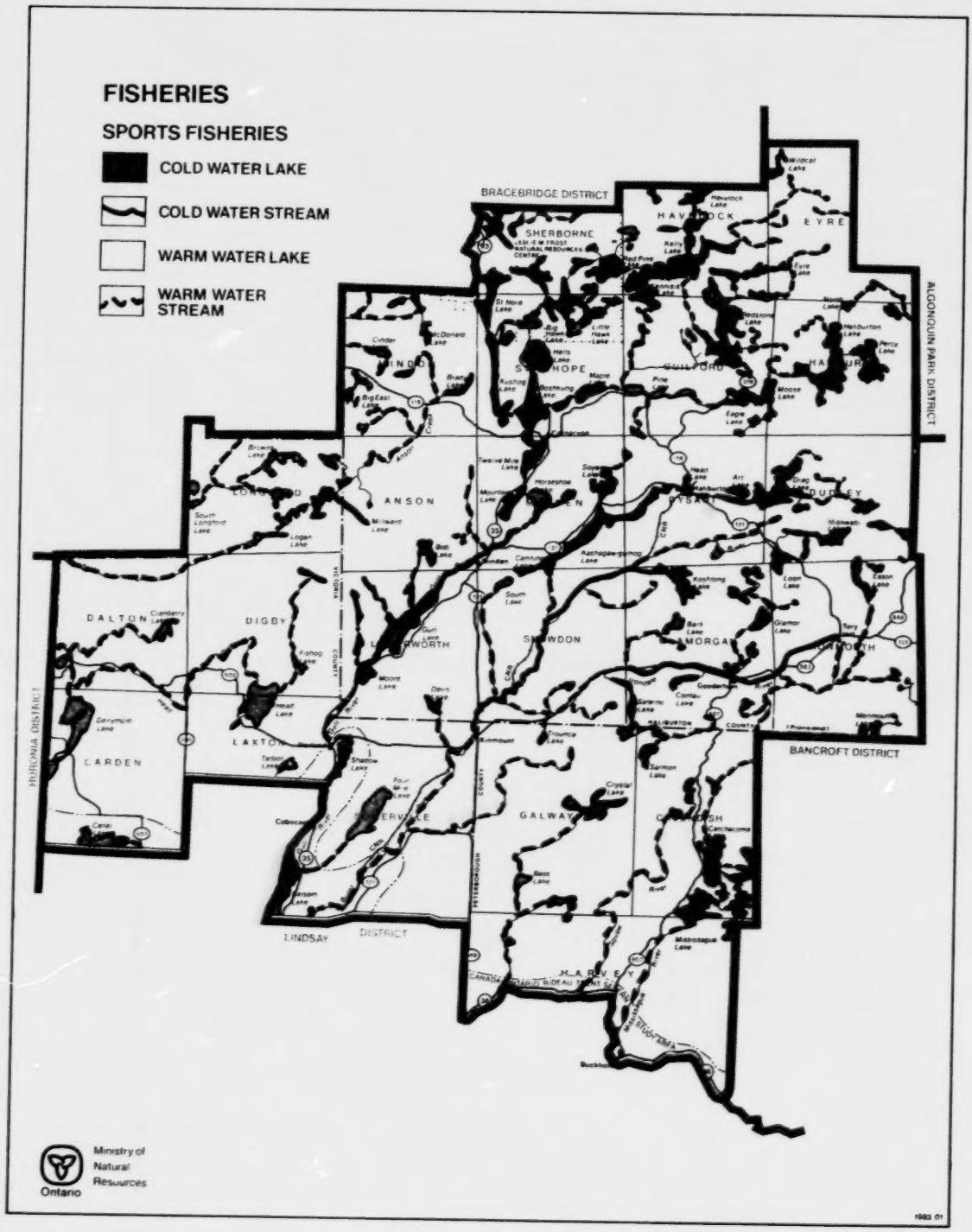
(1) The portion of this target to be achieved on the Frost Centre is 0.09 million recreational fishing opportunities annually.

MAP 5

MINDEN DISTRICT

M.N.R. Administrative District
County
Township
Community
Provincial Highways
Railways

5 0 5 10 15 20 Kilometres
5 0 5 10 15 Miles



The calculations of productivity have not included the river systems within the district as there is not at present, a method to accurately calculate production. Nevertheless, it is recognized that rivers and streams provide a valuable fishery and will be managed for such.

Commercial Fishing

There is no commercial food fishery in Minden District at present. However, there may be some opportunity related to the harvest of under-utilized species such as rock bass, perch and suckers.

In a heavily angled sport fishery, the non-game fish may become over-abundant because of the lack of competition from game fish. This imbalance may increase as non-game fish compete severely with, and effectively reduce the game fish production. A commercial fishery is one technique which may help reduce this fish community imbalance.

Bait Fish

It is felt that a target harvest of 25,000 dozen bait fish per year is well below the allowable harvest for the district. Bait fish returns from 1981 showed a harvest of 31,000 dozen. Studies are now underway to determine the district's potential and allowable harvest. Following completion, targets will be reassessed.

Habitat protection for bait fish will be maintained through the guidelines for modified management areas (page 34) and the plan input and review process.

The management of bait fisheries on a licenced block system will continue. This system allows the bait fishery to be managed in an organized, rational manner.

The major problems presently facing the bait fishery include:

- limited resource access owing to private land constraints; and
- the presence and spread of spiny-rayed fish (e.g. perch) in many areas.

4. PROGRAM STRATEGY

The management and protection of fisheries resources includes, ensuring on Crown lands and encouraging on private land, uses which are compatible with individual fisheries.

To this end, the following management principles have been adopted in Minden District:

- manage fish communities rather than individual species. This strengthening or re-establishing of fish communities will normally emphasize native species;
- ensure harvests are consistent with the productivity of individual fisheries;
- participate in monitoring the effects of acid precipitation and related metals and other contaminants on fisheries;
- apply appropriate recommendations, which arise from on-going studies, regarding the control and mitigation of the effects of acid rain;
- recognize and manage naturally self-sustaining fisheries. These lakes must be managed primarily to maintain healthy naturally self-sustaining fish stocks; and
- manage non-self-sustaining cold water fisheries first, to eliminate the factors preventing reproduction and second, to provide optimum recreation days. Those cold water fisheries identified as being incapable of maintaining self-sustaining fisheries should be managed to provide maximum recreation days (i.e. put and take artificial fisheries). Stocking of fisheries must be based upon a real demand and consideration of all biological and social issues concerned with stocking.

The following techniques will be emphasized:

- prepare a comprehensive fisheries management plan, outlining specific management activities, to ensure that targets are met;
- protect critical fish habitat including spawning beds, nursery areas and water quality, and carry out restoration where necessary and possible;
- create and maintain fisheries by stocking to provide angling opportunities in areas of high demand;
- undertake fish stocking according to the need, and with consideration for all biological and social issues;
- more accurately assess angling activity, success rates and harvest;
- maintain access to recreational fisheries;
- reduce undesirable fish species. Anglers will be encouraged to take coarse fish, especially rock bass, perch and smelt;
- assist marketing and recreational use of presently under-utilized fish species;
- prevent the over-harvest of fisheries, particularly cold water fisheries. Effective and efficient means must be created to control lake trout fishing pressure and persuade anglers to shift pressure to the under-utilized warm water species;
- classify all lakes in the district within five years according to the sensitivity of habitat to development. This information will be made available to municipalities and the general public;

- apply the guidelines for modified management areas (page 34) to protect critical fish habitat affected by Crown land activities; and
- ensure that all ministry activities or approval of activities (e.g. dredging and filling, dams and ponds) that may affect fisheries habitat are reviewed for their impact on the fisheries resource.

Management efforts for specific fisheries should be based upon the following priorities:
- need for the specific fisheries;
- potential contribution of the fisheries toward meeting the target;
- management effort required to meet the target; and
- presence or absence of self-sustaining potential.

Municipalities, other agencies and private landowners will be encouraged to support the objectives contained in this document:
- through the plan input and plan review process, ensure that development occurs in a manner which does not impact upon fisheries habitat;
- negotiate with and encourage all agencies involved in planning to recognize the special considerations related to shoreline development that may be necessary to protect fisheries habitat;
- use of provisions of the *Planning Act* to protect critical fish habitat affected by private land development;
- encourage the recognition of critical fish habitat and the inclusion of appropriate policies in official plans; and
- work with other agencies involved in water level control to operate the water systems in a manner compatible with fisheries management. Specifically, attempt to minimize water level and flow fluctuations during critical periods.

E: wildlife

1. OBJECTIVE

The objective for wildlife management in southern Ontario is to provide opportunities for social and economic benefits from wildlife recreation and fur harvest consistent with the maintenance of healthy wildlife populations.

More specific objectives are:

Hunting
- to provide opportunities sufficient to maintain the present rate of participation and quality of hunting by residents; and
- to maintain the contribution to the economy of hunting by non-residents.

Trapping
- to sustain the maximum yield from wild fur-bearer populations while maintaining the present diversity of fur types.

Other Uses of Wildlife
- to prevent additional species from becoming endangered or threatened;
- to improve the status of existing endangered or threatened species with the objective of removing them from the endangered species list; and
- to maintain populations of all wildlife species (both non-game and game) at levels sufficient to:
  - provide opportunities for recreational enjoyment, aesthetic appreciation, scientific investigation, and educational uses;
  - provide benefits from tourism;
  - ensure environmental quality and ecosystem integrity; and
  - ensure the safety of the public.

2. TARGETS

The targets in Minden District are:

Hunting

- to provide by the year 2000[1] 112,000 opportunities of hunting per annum, including: 44,000 opportunities of big game hunting, 52,000 opportunities of small game hunting, and 16,000 opportunities of waterfowl hunting.

Trapping

- to manage populations of wild furbearers such that an average harvest of 19,000 pelts can be achieved by the year 2000, while maintaining present species diversity.

Other Uses of Wildlife

- to ensure no native wildlife species becomes extinct.

A target for wildlife viewing has not been included owing to the difficulty of measuring this activity and of assessing the influence of management actions. Viewing targets will be defined through ongoing policy development and will be incorporated into the *Land Use Guidelines* at an appropriate opportunity.

3. DISCUSSION

The hunting targets are based on the assumption that the district will maintain its present relative contribution to the provision of wildlife recreation.

Population levels have been estimated for several wildlife species or groups of species. These include: big game (e.g. deer, moose, and black bear); small game (e.g. ruffed grouse, woodcock and snowshoe hare); waterfowl; and furbearers.

With present management, population levels for small game, waterfowl, and furbearers are assumed to be at potential. These levels are sufficient to meet the target assigned to the district.

The present population levels for big game are below potential. Achievement of the big game target will depend upon the restoration of deer populations to levels of the mid 1960's.

Since the early 1960's the deer herds in Minden District have been reduced by 80 percent (from an estimated 15,000 deer in 1960 to 3,300 deer in 1980). The reasons for this decline include overharvesting, habitat deterioration, predation, and adverse winter weather conditions.

With enhanced management, deer herds should increase and stabilize at levels similar to that of the mid-1960's (approximately 12,000 deer). If this is achieved, the target for big game will be realized.

Wildlife habitat is illustrated on Map 6.

Approximately 60 percent of all wildlife habitat is on private land. Achievement of targets for wildlife recreation is contingent upon maintaining and encouraging access to the private land base.

Also, six of the seven major deer yards are located wholly or partially on private lands. If these lands are unavailable for management, achievement of wildlife objectives and targets will be severely constrained.

The management of the beaver populations should include the management of food species, notably poplar, adjacent to beaver ponds.

4. PROGRAM STRATEGY

The ministry will attempt to manage and protect on Crown lands, and encourage the management and protection on private lands of all critical wildlife habitat including:

- maintain and where possible enhance, traditional winter deer range;
- maintain summer deer range;
- maintain productive moose habitat, located primarily in Eyre, Guilford, Havelock, and Harburn Townships. In the face of expanding deer populations, the moose populations may decline:
- maintain and where possible, enhance wetland areas;
- manage and protect important nesting sites;
- identify and protect endangered, threatened or rare wildlife species;
- identify, protect and manage significant populations of wildlife species (both non-game and game) if the best available scientific, social and economic data indicate that such action is necessary to achieve the above objectives and targets;
- acquire critical habitat areas where necessary and feasible;
- maintain ministry access and encourage the retention of municipal access to lands important for wildlife uses;
- take specific control action where wildlife destroys domestic animals or where wolves and

(1) The portion of these targets to be achieved on the land within the Frost Centre is: trapping, 600 pelts; big game hunting, 2,700 opportunities; and small game hunting, 5,400 opportunities.

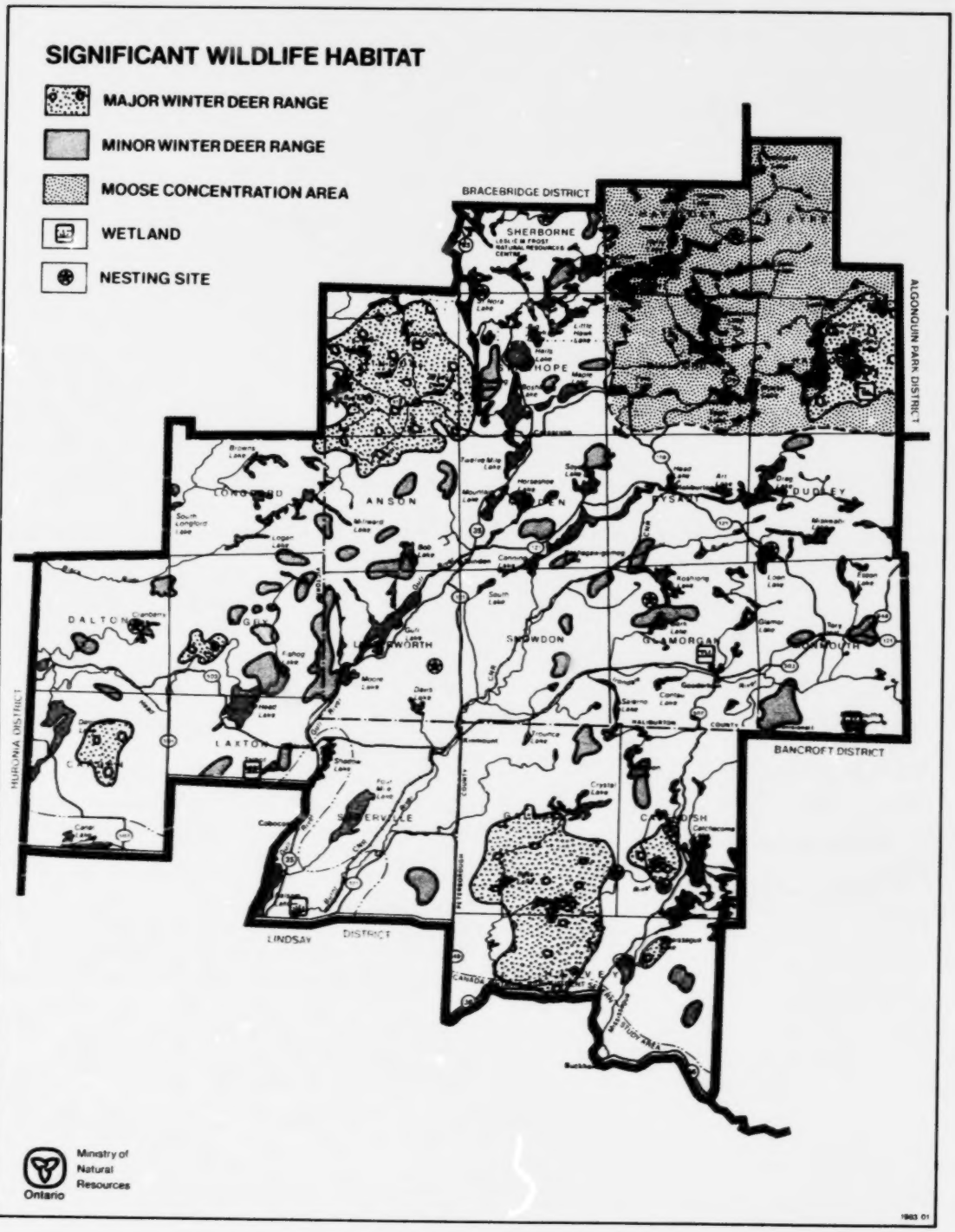
MAP 6

MINDEN DISTRICT

M.N.R. Administrative District
County
Township
Community
Provincial Highways
Railways

5 0 5 10 15 20 Kilometres
5 0 5 10 15 Miles

N



coyotes harass deer in yarding areas;
- ensure protection of the wildlife values of wetlands in ministry management activities and in the review of private sector development proposals; and
- encourage the provision of appropriate access to lands important for wildlife uses.

Management efforts will emphasize the following:
- prepare a comprehensive wildlife management plan for the entire district. This will provide management guidelines for each habitat area;
- prepare more specific management plans for each deer yard. A management plan has been completed for the Hindon Deer Yard;
- manage traditional winter deer yards to ensure:
  - adequate conifer cover;
  - protection of deer population from predators, poaching and disease; and
  - the provision of adequate and accessible high quality food;
- ensure that other land uses within deer yards, including the extraction of timber, aggregate and the provision of recreation opportunities are consistent with deer management objectives;
- encourage proper forest management within deer yards, consistent with the maintenance and enhancement of winter deer habitat. Such activity will contribute to the achievement of both the wildlife and the forestry targets;
- encourage normal forest management activities in areas other than deer yards to provide diversified habitat and to contribute to the production of big game, small game and furbearers. The following guidelines provide for enhanced wildlife habitat:
  - ensure a good interspersion of timber cover types throughout the forested area;
  - encourage timber harvesting techniques which result in a significant disturbance;
  - retain 5 to 10 percent of summer range in openings covered with herbaceous vegetation (e.g. beaver meadows, roadsides, log landings);
  - intersperse forest openings throughout the summer range;
  - encourage sustained yield management of oak stands, which are a significant food source for deer, and small game;
  - encourage poplar clear cuts; and
  - maintain 10 to 20 percent of the summer range in early successional stage (i.e. less than 20 years old);
- discourage dredging and filling activities which impact upon critical wetland areas;
- ensure that the granting of tenure in critical wildlife habitat on Crown land is compatible with the objectives for wildlife management; and
- ensure effective enforcement of legislation to protect wildlife and wildlife habitat.

Encourage municipalities, other agencies and private landowners to support the objectives contained in this document:
- through the plan input and review process, ensure that development occurs in a manner which does not impact upon critical wildlife habitat. Specifically, in deer yards encourage the maintenance of conifer cover in all proposed new development, including lakeshore development;
- negotiate with and encourage all agencies involved in planning to recognize the special considerations that may be necessary to protect critical wildlife habitat (especially deer yards);
- ensure proper forest management in traditional deer yards by encouraging municipalities to pass tree cutting by-laws under the *Trees Act* (e.g. the Municipality of Dysart et al);
- ensure proper forest management in deer yards on private land by encouraging landowners to enter into agreements with the ministry under the *Woodlands Improvement Act* (e.g. the Percy Lake area);
- work with private groups, the conservation authority, and others that can assist in the acquisition or management of wildlife habitat;
- work with municipalities and the Kawartha Conservation Authority to encourage the continued availability of lands for hunting; and
- explore with private landowners ways and means to ensure management of wildlife habitat and the provision of hunting, viewing and trapping opportunities. This will include the development of effective wildlife extension programs, and hunter and trapper education programs.

F: provincial parks

1. OBJECTIVES

The objectives of the provincial parks system in southern Ontario are:

Protection

- to protect provincially significant elements of the natural and cultural landscape of Ontario;

Heritage Appreciation

- to provide opportunities for exploration and appreciation of the outdoor natural and cultural heritage of Ontario;

Recreation

- to provide provincial park outdoor recreation opportunities ranging from high intensity day use to low intensity wilderness experiences; and

Tourism

- to provide Ontario's residents and out-of-province visitors with opportunities to discover and experience the distinctive regions of the Province.

2. TARGETS

The targets for the provincial parks system in Minden District are:

Protection

- Earth Science[1] to represent the provincially significant representative and special earth science features in Minden District which contribute to the representation of the thirty-five geological environments of southern Ontario;
- Life Science[2] to represent the provincially significant, life science features in Minden District which contribute to the representation of each vegetation site type in the twenty-six site districts in southern Ontario; and
- Historical Resources[3] to represent the provincially significant, landscape related pre-historical and historical resources which contribute to the representation of the fourteen themes of southern Ontario's history;

Heritage Appreciation

- to provide opportunities for exploration and appreciation of the outdoor natural and cultural heritage of Minden District; and

Recreation/Tourism[4]

- to provide annually, by the year 2000, the following recreation opportunities for residents and visitors to provincial parks in Minden District:
  - Swimming
    21,000 opportunities
  - Picnicking
    2,000 opportunities
  - Camping
    41,000 opportunities

3. DISCUSSION

The ministry recognizes that physical, biological, cultural and historical resources are important elements in the environment and that representative and unique components should be protected. It also recognizes that outdoor recreation is important for social well-being and tourism.

Provincial parks are recognized as an important means of protecting significant resources and

(1) Specific emphasis will be placed on the bedrock formations and features of the Ontario Gneiss Segment, the Central Metasedimentary Belt, and the Paleozoic contact in the south of the district.

(2) Specifically site districts 8, 9 and 11 in site region 5E will be represented.

(3) Specific emphasis will be on the Trent/Severn Watershed, logging, colonization roads, south shield agriculture and recreation and conservation.

(4) The targets for recreation and tourism are expressed in terms of opportunities to swim, picnic, camp and canoe trip in provincial parks. These activities have been chosen as representative uses because quantifiable facilities are required for them. Other activities occur and are important in provincial parks; however, the selected activities are measurable and provide useful indicators of the amount of activity occurring.

providing recreation and tourism benefits. In this regard, the provincial park system is designed to be permanent, distinctive, representative, varied and accessible. It is also complementary to the facilities of the private sector and other public agencies.

The provincial park objectives will be achieved through specific park classes and zones within those classes. There are six classes of provincial parks: wilderness, nature reserve, natural environment, waterway, historical and recreation. Protection targets may also be achieved through agreements with other agencies and private landowners.

To assist in meeting the protection objective, the ministry is identifying a system of areas of natural and scientific interest.

Areas of natural and scientific interest are areas of land and water containing natural landscapes or features which have been identified as having values related to protection, natural heritage appreciation, scientific study or education.

Areas of natural and scientific interest may vary in level of significance. The most significant may contribute to the achievement of the ministry's protection objective.

Areas of natural and scientific interest encourage the protection of additional areas not regulated as provincial parks and provide a focus for both the public and private sectors to contribute to the protection of Ontario's natural heritage.

Within the context of areas of natural and scientific interest, the ministry has identified a number of significant earth and life science features within the district (Table 1). A number of these features occur in the candidate park. Many others occur on private land or lands of other government agencies. Appropriate protection will be sought through agreements with private landowners and the cooperation with other government agencies.

One additional site having potential as an area of natural and scientific interest has recently been identified and is being examined to determine its significance. It is an alvar formation[1] in Carden Township.

When inventories are complete additional earth and life science features and historical resources of significance, and other areas of natural and scientific interest may be identified in the district.

Map 7 shows existing and proposed recreational facilities, while Table 1 identifies in detail how the candidate park contributes to the achievement of the parks targets. At present there are no provincial parks in the district.

These targets recognize the importance of Minden District as a destination recreation and tourism area near large urban centres. The targets require the establishment of a new park to act as a major focus for tourism in the southern part of the district.[2] The targets also indicate that other important natural features should be protected and made available for public use and appreciation.

Additions to the park system will be complementary to, rather than competitive with, the private sector and other public agencies. They will relate directly to the distinctive nature of provincial parks.

4. PROGRAM STRATEGY

Identified park values in Kawartha Highlands candidate park will be protected. Uses and facilities which complement the achievement of park objectives will be encouraged; uses which have no significant negative impact on the long term achievement of park objectives will be permitted with judicious controls; and uses which would conflict with the long-term achievement of park objectives will be prohibited.

Prior to park development, a master plan will be developed which will examine concerns regarding the boundaries of the proposed park and identify permitted activities. Master planning will include full public discussion.

Interim management guidelines will be developed for Kawartha Highlands, in conjunction with all programs to guide land use activities in the candidate prior to park development.

The ministry will continue to conduct inventories to identify areas of natural and scientific interest.

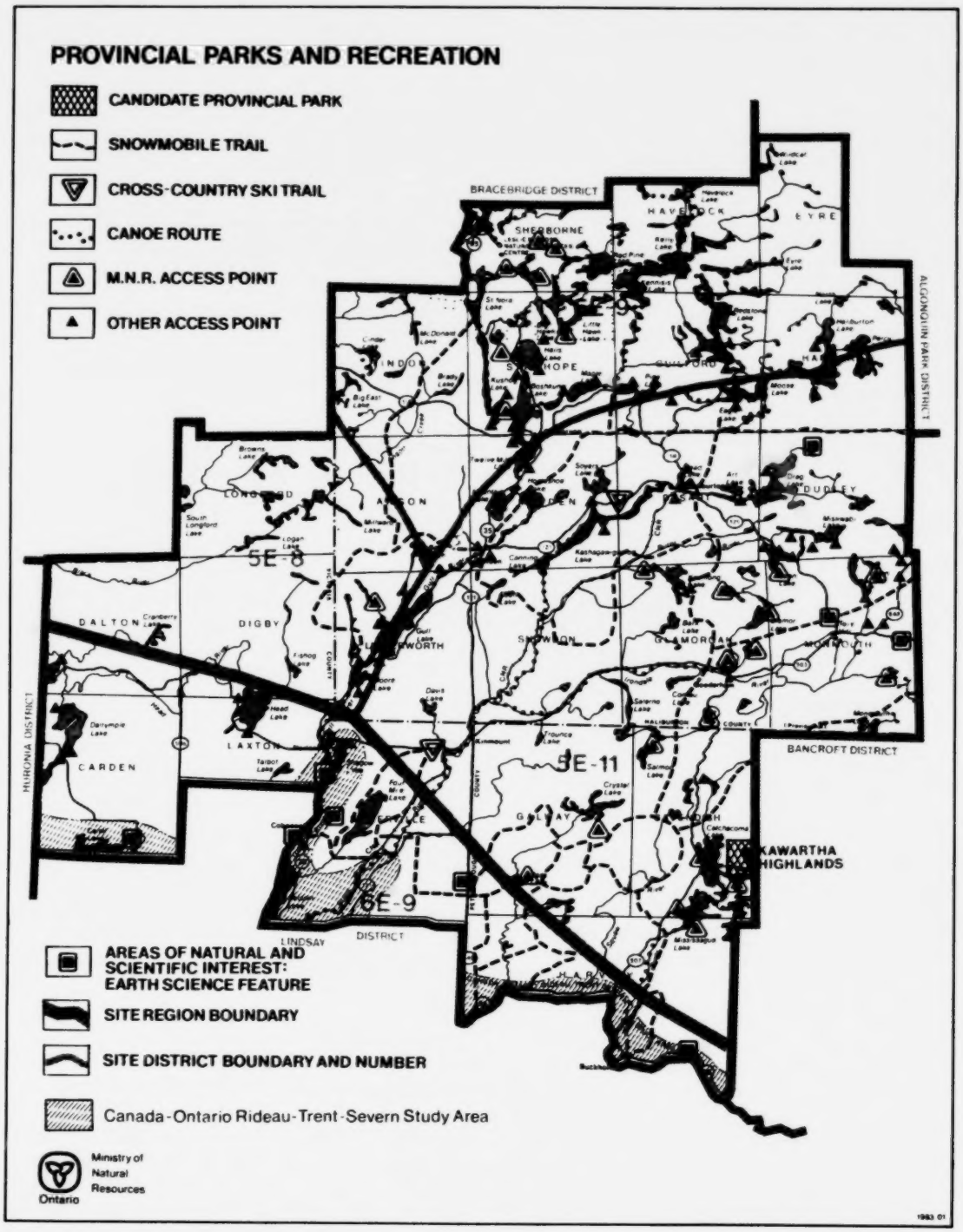
(1) This is an area of thin soil over essentially flat limestone rock with distinctive vegetation.
(2) The McRae addition was originally included in the targets for Minden District, however as this area has been added to the Algonquin Park Administrative District the backcountry recreational opportunities (3000 opportunities) associated with this area are no longer included with Minden District.

MAP 7

MINDEN DISTRICT

M.N.R. Administrative District
County
Township
Community
Provincial Highways
Railways

5 0 5 10 15 20 Kilometres
5 0 5 10 15 Miles



The following management direction for areas of natural and scientific interest has been adopted:

- where these occur on Crown land managed by the ministry, the ministry will ensure that the land uses and activities which occur provide for the protection of the identified values;
- where areas of natural and scientific interest occur on private land, the ministry will ensure that landowners are aware of these features and seek cooperation in their protection. This does not necessarily indicate any intent of the ministry to acquire such land; and
- a registry of designated and protected areas of natural and scientific interest will be maintained.

TABLE 1 ACHIEVEMENT OF PROVINCIAL PARK TARGETS IN MINDEN DISTRICT

	Management by Park Class or Agreement	PROTECTION/HERITAGE APPRECIATION			RECREATION/TOURISM						
					Swimming		Picnicking		Camping		Back-country(1)
		Earth Science	Life Science	Historical	Opp. (000's)	#of Beaches	Opp. (000's)	# of picnic tables	Opp. (000's)	# of camp-sites	
Total Target (2000)					21	518	2	9	41	189	—
Existing Opportunities (1982)					—	—	—	—	—	—	—
New Opportunity Requirement by 2000					21	518	2	9	41	189	—
Candidate Parks:											
Kawartha Highlands	NE	R	L	U	21	518	2	9	41	189	—
Other Areas of Natural and Scientific Interest:											
Kirkfield Liftlock	AGREE	P	U	—							
Monmouth Form (Hwy. 121)	AGREE	P	U	—							
Coboconk E. Quarry	AGREE	P	U	—							
Coboconk S. Road Cut	AGREE	P	U	—							
Shadow Lake Road Cut	AGREE	P	U	—							
Deer Bay Creek (Hwy. 36)	AGREE	P	U	—							
Silver Lake Road Cut	AGREE	R	U	—							
Tory Hill (Hwy. 121)	AGREE	R	U	—							
Haliburton Dry Wells	—	L	U	—							
TOTAL POTENTIALS					21	518	2	9	41	189	

NOTES: ***Park Classification***
NE — Natural Environment
AGREE — Agreement

Resource Significance
P — Provincial
R — Regional
L — Local
U — Unknown
— — Nil

(1) Backcountry recreation includes canoe tripping in remote areas.

G: general recreation

1. OBJECTIVES

The ministry's recreation management efforts are directed primarily to hunting, fishing, and provincial parks. There are a number of other activities which the ministry carries out for which no objectives have been developed. Tentative objectives for general recreation are:

- to provide and to encourage a wide variety of outdoor recreation opportunities ranging from day use to backcountry recreation;
- to identify, select and protect provincially significant natural and cultural resources; and
- to provide an economic contribution through tourism.

2. TARGET

Specific targets for general recreation in southern Ontario have not been established as yet by the ministry. However, it is part of the ministry's objective to provide on Crown land and encourage on private land, a continuous contribution to the economy from tourism and its related industries.

3. DISCUSSION

The rugged terrain, hardwood hills, and the many lakes and rivers in Minden District provide a significant recreation potential. The general recreation objectives recognizes that the provincial interest is not limited to areas specifically designated as parks, but includes such prominent resources as the Haliburton Highlands.

The ministry can contribute to the achievement of general recreation objectives by providing trails and other recreation facilities on agreement forest lands, wildlife management areas, and other Crown lands.

Numerous groups and agencies also contribute to the achievement of these objectives by developing trails and other recreational facilities, and protecting significant natural and cultural resources. The ministry will maintain contact with local trail clubs, and will provide advice on the development and management of facilities by these and other suppliers of general recreation.

In Algonquin Region, future demands (to the year 2000) for typical general recreation activities were assessed to assist the district in retaining the option of providing additional opportunities, and to support the maintenance of existing facilities. The ministry has relied in the past, and will continue to rely on other agencies and the private sector for the provision of many of these opportunities. This means that meeting future needs may be contingent upon the participation of these groups.

In Minden, future additional demand to the year 2000 for selected general recreational activities appear to be as follows:[1] 40,000 backcountry opportunities (600 kilometres of canoe routes); 86,000 snowmobiling opportunities (400 kilometres of trails); 27,000 cross-country skiing opportunities (60 kilometres of trails); and 56,000 hiking opportunities (220 kilometres of trails).

In addition to providing recreation opportunities and protection through the provincial parks program, the ministry has an interest in providing or encouraging these benefits from all land.

To maintain consistency with the tentative objectives, the district will give consideration to: the protection of natural and cultural features of provincial significance; protection of the significant inland lakes recreation-tourism landscape; and support of complementary private sector development. Furthermore, the district will ensure that future options for general recreation remain open on Crown land; maintain the present level of service on Crown land; and will continue

(1) Present activity is: canoe tripping, 41,000 opportunities (350 kilometres); snowmobiling, 122,000 opportunities (500 kilometres); cross-country skiing, 11,000 opportunities (25 kilometres); access points, 28 sites; hiking, 7,000 opportunities (25 kilometres).

to cooperate in the provision of recreation opportunities by the private sector.

Existing recreation facilities are illustrated on Map 7.

4. PROGRAM STRATEGY

- conduct ministry activities so as to maintain and enhance the quality of the recreation landscape;
- retain existing recreation facilities and encourage the development of additional recreational facilities on both public and private land;
- participate in efforts to improve the co-ordination of assistance programs. To this end, the ministry will cooperate with municipalities and private organizations in acquiring, planning and developing recreation areas and facilities;
- assist groups and agencies through the granting of permission to develop recreational trails on appropriate public lands. The ministry will also maintain contact with local trail clubs, and will provide advice on the development and management of facilities by these and other suppliers of general recreation;
- encourage general recreational activities throughout the district in a manner compatible with other recreational and resource management activities;
- ensure the requirements of the general recreation program are considered in the application of the guidelines for modified management areas (page 34);
- encourage multiple use of recreation facilities (e.g. snowmobile and hiking trails); and
- identify provincially rare and endangered species of native plants and take appropriate action for their protection.

H: land administration

1. OBJECTIVE

The objective is to facilitate the orderly development and conservation of Ontario's land and water resources.

2. TARGETS

Specific land administration targets have not been developed.

3. DISCUSSION

The land administration program, including land acquisition, land disposition, custodianship of Crown land and water, watershed management, road construction and other activities, is considered to be a service-oriented program, carried out to assist in the achievement of other ministry programs and government objectives.

Within the Minden District there are 45 water control structures administered by various agencies. Eight of these are controlled by the ministry, 35 are controlled by Parks Canada and 2 by the Orillia Water, Light and Power Company.

There are several privately owned dams within the district. The objectives being achieved vary from dam to dam. Some of the objectives are maintenance of water levels for recreation, low flow augmentation, hydro generation, wildlife management, flood control and transportation.

The Minden District borders Algonquin Provincial Park. Consequently, special attention must be given to the requirements of the Algonquin Park Master Plan regarding acquisition of private land and disposition of Crown lands within 1 mile of the park boundary.

The general strategy for land management is to act in a coordinating role within the ministry and in presenting ministry concerns to the public and outside agencies; and to administer all Crown lands and waters in the best public interest. As such, the policies applicable to land management are an important means to implement all ministry programs.

4. PROGRAM STRATEGY

Land management efforts will be directed toward:

- custodianship of all Crown land and water. The ministry will manage this land and water in the best public interest and will ensure that all uses are consistent with ministry policies and provincial statutes;
- acquisition of lands which are required in order to meet ministry objectives;
- development of interim property management plans to identify permitted uses consistent with the objectives for which the property was purchased, priorities, and standards for management; and
- management of all acquired lands before they are required by a ministry program in accordance with approved interim property management plans and in such a manner so as not to compromise the proposed final use for the lands.

Land disposition may be permitted consistent with legislation (e.g. *Mining Act, Public Lands Act*) and the policies and guidelines outlined in this document. Disposition should be generally consistent with municipal official plans and meet the requirements of zoning by-laws. Furthermore, disposition should complement private land development. Consequently, disposition of Crown land should not normally occur if:

- land of similar capability, suitability and site characteristics is available privately;
- disposition would result in competition with the sale of private land for similar purposes or would depress the market value of private land in the district; or
- disposition could result in restrictions on adjacent resource use provided for in this document or could result in over-utilization of a resource (including water quality).

Disposition will be further guided by the following:

- Crown land will be made available for the programs of other agencies (federal, provincial, municipal).
- disposition of Crown land for urban residential purposes will be considered where there is a clearly defined need based on an evident expanding population as demonstrated by a housing authority and the Crown land is adjacent to existing developed areas;
- land may be made available for: expansion of existing commercial or tourism facilities; major private or public sector tourism destination facilities which complement existing development and which are centred on the major recreational features of Minden District; expansion of lots to permit location for septic systems and therefore compliance with the requirements of the Ministry of the Environment; and for temporary work camps to house woods workers, exploration parties or trappers involved in resource extraction, management or inventory. Camps will be located at least ¼ mile from areas of public interest, or specific recreation resources; and
- no further disposition of Crown lands will be permitted for cottaging purposes, since there is an abundant supply available through the private sector.

With regard to the Algonquin Park buffer zone:

- acquisition will be priorized according to those properties which have the greatest impact on existing or planned public recreation use; and
- disposition of Crown lands will only occur where necessary to meet the requirements of timber licences.

In the district, a number of private hunt camps have been authorized on Crown land. These camps are generally compatible with the programs of the ministry and will normally be permitted to continue. No new hunt camps will be permitted on Crown land.

The following direction will be pursued with respect to dredging and filling:

- a public education program clearly identifying the concerns regarding shoreline alterations will be undertaken; and
- dredging and filling will only be permitted where critical fish and wildlife habitat will not be destroyed or impaired; siltation will not have adverse effects on adjacent landowners; and sedimentation, water flows, and erosion will not result in downstream or upstream hazards.

Dams, channel improvements and water crossings will be permitted provided they do not result in:

- impairment of water quality (temperature, siltation, dissolved solids) for downstream fisheries;
- impediments to migration of fish;
- increased flood hazards upstream or downstream;
- impediments to stream navigation; or
- impairment or impediments to stream flow.

Where construction of dams or improvements is consistent with ministry objectives for recreation, fisheries and energy production, the ministry will provide technical assistance and advice.

Larger dams will be dealt with on a site specific basis.

With regard to water management the ministry will, in cooperation with private dam owners, the

Kawartha Region Conservation Authority, Parks Canada, and other water control agencies, seek to manage water elevations and flows to enhance achievement of its program objectives.

While dams may serve a number of purposes, the primary objective of management of ministry operated dams in Minden is as follows:

- Kinmount dam — fisheries habitat and control of water levels in the Town of Kinmount;
- Nogies Creek dam — fisheries management;
- Bottle Lake dam — managed for the Trent Canal System and to protect the park values of the Kawartha Highlands proposed park;
- Salerno Lake dam — managed for cottagers on Salerno Lake;
- Digby dam — managed for waterfowl habitat;
- Lutterworth dam — managed for cottagers on Lutterworth Lake; and
- Raven Lake dam — managed by the Leslie M. Frost Natural Resources Centre for fisheries and recreation, including cottagers.

With respect to other dams operated by other agencies and private landowners, the ministry will encourage the following management to take place:

- manage water levels in a manner compatible with the fisheries. Specifically, attempt to minimize water level and flow fluctuations during critical periods; and
- manage water levels to protect against flooding hazards.

To achieve ministry objectives a high degree of management integration must occur. This is necessary both in the use of the resource and in the delivery of programs.

Multiple use resource management will be carried out and the objectives of a number of programs will be achieved in the same area. However, it is recognized that some activities are not compatible and that separation of activities may be necessary.

Where restrictions involve large areas of land or water, special identification of these areas may be necessary. Where restrictions involve relatively small areas of land and water, special designation may not be necessary but the sites must be protected by special management.

The principle of management integration is reflected through the preceding sections. In addition, the following direction for significant program areas; areas of special interest; modified management areas; resource access; and general resource areas are designed to assist the ministry in the achievement of its program objectives.

A: significant program areas

1. OBJECTIVE

The Ministry of Natural Resources in Minden District will seek to protect significant program areas.

2. DISCUSSION/STRATEGY

Significant program areas are sites which clearly contribute to the achievement of ministry targets and which may require some measure of protection or special management if targets are to be achieved.

Significant program areas may be small site-specific features, or larger more extensive areas. Examples are spawning beds and nursery areas for fish, habitat of endangered species, representative plant communities and winter deer yards.

Many of these sites, in particular the more extensive areas, have been identified on Map 8 (back pocket). However, not all sites have been designated in the document since some sites (e.g. eagle nests) are very sensitive to the type of human activity which might be encouraged by their identification, and in other cases inventories are incomplete.

As new sites or resource areas are identified, these will be treated as significant program areas. The ministry will protect significant program areas when undertaking its activities and will encourage the protection of such sites on private lands through the municipal planning process.

B: areas of special interest

1. OBJECTIVE

The ministry will attempt to carry out its management activities such that areas of special interest are not destroyed.

2. DISCUSSION/STRATEGY

Areas of special interest include site-specific features and resources of public interest which are not specifically related to ministry program targets.

Examples include unique site-specific habitat for wildlife other than endangered species or species specifically managed for hunting and trapping (heronry, osprey nesting sites). Also included are features of cultural interest (scenic vista, old buildings or logging camps).

To ensure that ministry activities do not unnecessarily affect these features, the ministry will maintain an up-to-date listing and mapping for consideration in resource management and use.

The ministry will also identify such areas to municipalities and other agencies in the plan review process. However, the ministry will not oppose private development in order to protect these features.

C: modified management areas

1. OBJECTIVE

Modified management areas will normally be provided on Crown land, and encouraged on private land, on all shorelands. Modified management areas may also be provided or encouraged in other areas such as along roads and designated trails.

The purpose of modified management areas is to maintain or improve resource values such as:

- fish habitat;
- wildlife habitat;
- scenic areas or other recreation or tourism resources and establishments;
- special features such as cultural, historic, biological or earth science sites.

2. DISCUSSION

Modified management areas are areas of land surrounding specific facilities, activity areas, or resource features, wherein certain resource management activities or land uses are either prohibited or constrained to ensure that objectives for adjacent facilities are not impaired.

Modified management areas will normally be managed by a two-zone concept, particularly along shorelands, where the inner zone is one of minimal disturbance and the outer zone is an area of more general use, where certain aspects of management are carefully monitored.

They have the dual advantage of enhancing the quality of recreation and tourism in areas where resource extraction is occurring and of allowing

resource extraction to be an accepted use in areas identified primarily for recreation and other uses.

Modified management areas placed along major transportation and access routes, on recreational lakes and waterways and on some of the major trails, contribute to the maintenance of the recreation landscape.

Modified management areas ensure unhindered passage on recreational trail systems; a variety of habitat conditions and therefore the opportunity for greater wildlife variety; and protection for fisheries by maintaining shade; and by minimizing siltation and nutrient enrichment of streams and lakes with significant fisheries values. Furbearers are also protected by the retention of cover along the shorelines of waterbodies.

Public opposition in the past has prevented or severely hindered mineral exploration and the management and extraction of natural resources. Modified management areas contribute in a positive way by reducing conflicts between land uses, thereby ensuring continued opportunities for resource management.

As the name implies, modified management areas are not 'no use zones' where all land uses or activities are prohibited. Instead, the prime purpose or intent of a modified management area is to provide for the diminishing effects of one conflicting land use with another.

The exact nature of modified management areas and their size will vary related to site conditions, the feature or resource being protected, and the activity from which it is separated.

Along the shorelands, a 120 metre (400 feet) modified management area[1] will normally be provided or encouraged. The extent of the two zones along shorelines will vary with local conditions such as topography,[2] soils and the nature of resource values being protected.

Along provincially and municipally maintained roads, and along ministry access roads with existing or potential for significant recreational use, a 120 metre (400 feet) modified management area may be provided or encouraged where appropriate.[3]

Along permanent or designated trails and portages, a 35 metre (115 feet) modified management area may be provided and encouraged where necessary.

Modified management areas will also be provided or encouraged for areas or sites which clearly contribute to achievement of ministry targets and which may require some measure of protection if targets are to be achieved. Examples include habitat of endangered species and deer wintering areas.[4]

Modified management areas may be provided for special features such as cultural and historical sites, earth and life science resources and other resources of public interest which are not specifically related to program targets.[5] They may also be provided around recreation or tourism resources or establishments.

It is recognized that there may be many cases along roads, and trails or adjacent to important resources where modified management areas are neither necessary nor desirable. There may be other instances where it is necessary to exceed the extent of modified management areas identified above in the establishment of either the inner or outer zone.

There is flexibility to develop modified management areas according to site conditions and to the values being protected. Ultimately, each situation will be judged on its own merits.

3. PROGRAM STRATEGY

For all modified management areas the following apply:

- management prescriptions will be developed

(1) Measured on the ground from the treed edge adjacent the shore.

(2) For instance, the width of the minimum disturbance zone along shorelands should vary with slope as follows:

Shore Slope in Percent	*Width of Minimum Disturbance Zone*
0	*15m (50 feet)*
10	*30m (100 feet)*
20	*40m (130 feet)*
30	*50m (165 feet)*
40	*60m (200 feet)*

(3) Setbacks are measured from the edge of the road right-of-way.

(4) Emphasis for the protection of these areas is also provided in general resource areas and significant program areas.

(5) Emphasis for the protection of these areas is also provided under areas of special interest.

and will be available for public review. For forest management activities, such prescriptions will be identified in operating plans, annual plans, and conditions stipulated in licences and cutting approvals;

- a set of guidelines for road construction will be attached to all work permits related to shoreland areas, with special reference to stream crossings;
- where the two zones are set out, the standards for management normally will be:

Minimum Disturbance Zone

- timber extraction and the construction of roads normally will not be permitted. However, in special circumstances, consideration may be given to discrete removal of selected individual trees, or the carrying out of specific management to maintain stand vigour associated with modified management area objectives, such as cover maintenance and recreation aesthetics. The accumulation of slash, skid trails and roads and the operation of mechanized equipment normally will be prohibited;
- the extraction of aggregate within this zone normally will not be permitted. However, in circumstances of critical supply, a gravel pit may be opened up to within 30 metres (100 feet) of a waterbody and 30 metres (100 feet) of a municipal or provincial roadway for a short time under strict site plan control, including rehabilitation suited to the site;
- management efforts in this zone will be directed toward ensuring that mineral exploration activity takes place in accordance with the general intent and purpose of the zone. In this regard, a public information program will be initiated, and special guidelines will be developed for use by the mining industry; and
- mine development on the surface, except for certain support functions, will generally not be permitted within 120 metres (400 feet) of waterbodies, or 90 metres (300 feet) of provincial highways. Accordingly, surface rights will not normally be granted in mining leases within such areas.

General Use Zone

- within the general use zones, resource management activities will be permitted subject to the use of techniques which are more sensitive to associated land uses (being buffered) than standard levels of resource management. Resource extraction activities will be permitted only where management systems can be developed that permit resource extraction, while clearly achieving the objective of resource protection.

D: ministry access road construction on public land

1. OBJECTIVE

Access roads will be developed and maintained to stimulate development and use of Ontario's natural resources, taking into account tourism requirements for isolation, the need of the mining and forest industries, outdoor recreation opportunities for the residents of Ontario and other general public, commercial and industrial transportation uses.

2. DISCUSSION

Access roads are essential for resource management and extraction. To meet resource production targets, new access roads must be developed in areas which are remote or which are at present poorly served by roads.

Restrictions on location, construction and maintenance of access roads and on public access may be necessary to provide remote recreation and tourism or to protect specific resources from overuse.

Road construction and maintenance will be guided by the following provincial standards:

- access roads will be developed and maintained

consistent with approved ministry land use guidelines, resource management plans and operating guidelines. To ensure overall co-ordination, multi-year plans for road access will be prepared for the province, the region, and the districts;

- access road plans will be developed on a long-term basis and will be subject to public consultation;
- plans will take into account the requirement (if any) for public access;
- roads will be classified as permanent or temporary based on intended use;
- temporary roads will be rendered inoperative when intended uses are fulfilled;
- access roads may be closed temporarily or seasonally to the public for resource management and/or public safety reasons; and
- alignment of roads will be planned:
  - to avoid lake access where appropriate;
  - to provide controlled access; or
  - to provide public access.

All proposals for construction of new ministry roads in Minden District must be approved by the District Manager upon the recommendation of the district roads committee. The district roads committee, in considering proposals for road construction, will adhere to the requirements of the *Environmental Assessment Act*, as appropriate.

Where deemed necessary by the district roads committee to protect other resource features, new roads to facilitate forest management objectives will be restricted to seasonal roads.

Where a new road, constructed by the ministry, is to be taken over by a municipality or the Ministry of Transportation and Communications, construction of the road will be to Ministry of Transportation and Communications standards.

New roads which provide access to private land, may be permitted provided they remain open to the general public. The local municipality will be consulted in the review of such proposals.

Proposals for construction of roadways within modified management areas will be carefully scrutinized and will normally not be permitted in an area identified as a "Minimum Disturbance Zone".

The ministry, when using authorized privately maintained roads on Crown land which provide access to private lands, will ensure that any damages created by ministry activities are rectified and that these roads are left to a standard that existed prior to ministry use.

This same standard of maintenance will be required by the ministry when authorizing use of such roads by outside agencies, private industry or individuals.

E: resource access (via private land)

1. DISCUSSION

Some of the natural resources of the planning area are only accessible for management purposes by way of private land.

Without significant road building programs, many areas of Crown land will remain inaccessible. In fact, some areas of Crown land, usually small blocks of land, are land locked (i.e. have no legal access). Private lands and private roadways often provide the only means to gain access.

The ministry, in carrying out its activities, will ensure that the rights of private landowners are respected.

2. PROGRAM STRATEGY

In the development of resource management plans the ministry will identify important resource areas which are accessible only by way of private lands.

In these cases, the ministry will attempt to negotiate with the landowner, agreements that provide access for resource management.

Prior to any undertaking by the ministry or prior to granting authority for resource utilization (e.g. quarry permit, cutting approvals) for resources that are only accessible via private lands, the ministry will ensure that appropriate approvals are first obtained from the private landowner. In the case of applications under the *Mining Act*, the ministry will, subject to all other concerns, issue a letter of intent and notify the applicant that he may apply to the Mining and Lands Commissioner to clear the matter of access over private land.

F: general resource areas

The *Minden District Land Use Guidelines* identify how the ministry may use public lands and influence the use of private land.

General resource areas have been identified in an effort to direct management efforts to achieve the objectives and targets of each program. These designations clearly recognize:

- the unique sensitivity of some sites (e.g. deer yards, seed orchards);
- that areas may shift over time, freeing some areas from special management requirements but establishing new ones; and
- the wide range of special management requirements associated with various resource concerns.

These areas are illustrated on Map 8 (back pocket). The intent and management strategy for each area is detailed below. Uses recommended in these areas are summarized in Table 2.

General resource areas have been identified without regard for land ownership. On public land, the management prescription for the area indicates the action which will be practiced by the ministry. On private land, the management strategy for the area indicates the action which the ministry will encourage in support of its objectives for resource management.

1. AREA A – MULTIPLE RESOURCE MANAGEMENT

a. Description
This area covers the greatest portion of the district, extending throughout the northern and eastern sections. It is an area of multiple resource use, and recognizes the high timber values.

b. Intent
To provide and encourage provision of multiple management of resources. Management of the timber resource is an important component of this area. Standard management practices, combined with the concept of sequential use will enable the ministry to take full advantage of the potential of the natural resources.

c. Management Strategy

- Ministry activities within this area will take place in accordance with the general policies and program policies identified in the preceding sections of this document;
- On private lands within this area, the ministry will encourage wise management through advisory services, assistance to landowners, public education programs, and the plan input and review process;
- Generally, outdoor recreation, land management activities and the extraction of timber, mineral, aggregate and fur resources may be undertaken according to accepted resource management techniques;
- The district will manage and encourage the management of this area to provide a high quality forest environment in accordance with the general policies and the guidelines for forestry (page 9);
- Normal forest management activities contribute to wildlife production of big game, small game and furbearers by providing a diversified

TABLE 2 RECOMMENDED USES

	AREA A	AREA B	AREA C	AREA D	AREA E	AREA F	AREA G	AREA H[1]	AREA I	AREA J[2]
Forestry	✔	✔	m	m	m	m	m		✔	
Hunting	✔	✔	✔	✔	✔	✔	m		✔	
Fishing	✔	✔	✔	✔	✔	✔	✔		–	
Mining (includes exploration)	✔	✔	m	m	m	m	m		m	
Trapping	✔	✔	✔	✔	✔	✔	m		✔	
General Recreation (not including hunting)	✔	✔	✔	✔	✔	✔	✔		✔	
Roads	✔	✔	m	m	m	m	m		m	
Trails	✔	✔	m	✔	✔	m	m		m	
Wildlife Management	✔	✔	✔	✔	✔	✔	m		m	
Disposition of Crown Land	✔	✔	m	m	✔	m	m		m	
Aggregate Extraction	✔	✔	m	m	m	m	m		m	
Canoe Route	✔	✔	✔	✔	✔	✔	✔		–	
Viewing	✔	✔	✔	✔	✔	✔	✔		✔	
Fisheries Management	✔	✔	✔	✔	✔	✔	m		–	
Dredging and Filling	✔	✔	–	m	m	m	m		–	
Access Points	✔	✔	✔	m	✔	✔	–		–	
Existing Hunt Camps	✔	✔	✔	–	–	–	–		–	
Private Cottaging	–	–	–	m	m	–	–		–	

✔ *Unrestricted*
m Modified as per the strategies for integrated management outlined under General Resource Areas
– *Not Applicable*

(1) Management strategies for each proposed natural area of significance are detailed on page 41.
(2) For management strategy, see "Leslie M. Frost Natural Resources Centre Integrated Plan for Land Use and Resource Development".

habitat. Forestry activities, as outlined under wildlife (page 20), are encouraged; and
- Within forested areas, mineral and aggregate extraction will, where possible, follow a planned sequential use of land.

2. AREA B—GENERAL RESOURCE MANAGEMENT

a. Description

This is an area of general resource use located in the southwestern portion of the district. It has a relatively low capability for timber production.

b. Intent

To provide and encourage provision of multiple management of resources. Management of the timber resource will not be an important component of this area. Standard management practices, combined with the concept of sequential use, will enable the ministry to take full advantage of these natural resources.

c. Management Strategy

- Ministry activities within this area will take place in accordance with the general policies and program policies identified in the preceding sections of this document;
- Generally outdoor recreation, land management activities and the extraction of timber, mineral aggregate, and fur resources may be undertaken according to accepted resource management techniques;
- On private lands within this area, the ministry will encourage wise management through advisory services, assistance to landowners, public education programs, and the plan input and review program.

3. AREA C—WINTER DEER RANGE

a. Description

Within the district there are a number of important winter deer yards. These are areas of suitable conifer cover and food, necessary for the survival

of deer during the winter months. They are distributed throughout the area with significant portions on private land.

b. Intent
Management within these areas will be directed toward increasing the deer populations. This will provide for an increase of quality of hunting and viewing opportunities.

c. Management Strategy
- The district will manage winter deer yards for the purpose of providing habitat conditions suitable for the survival of deer;
- All management activities within deer yards on Crown land will be consistent with the requirements of winter deer populations;
- The district will encourage the management of deer yarding areas on private lands consistent with the requirements of winter deer populations; and
- Management efforts will be directed by the policies and general guidelines identified under wildlife (page 20) and the following:
  - critical conifer cover must be maintained;
  - generally, logging should occur during the winter months;
  - outside conifer cover, logging which results in heavy disturbances creating hardwood release and abundant browse is encouraged;
  - clear cutting in poplar stands is encouraged;
  - controlled aggregate extraction may be permitted outside of critical conifer stands. Restrictions may be placed on the timing and extent of the operations. Rehabilitation will be required; and
  - roads and trails may be permitted in cases of justifiable need and should be constructed in such a manner as to discourage unintended uses.

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4. AREA D—NESTING SITES

a. Description
This area includes significant marsh areas, and nesting sites.

b. Intent
This is an area of quality habitat for the production of waterfowl and other birds. It provides for hunting and viewing opportunities.

c. Management Strategy
- Management will be directed toward maintaining the habitat, to ensure its continued availability for waterfowl and other bird production; and
- Management efforts will be directed by the policies and general intent of the wildlife section (page 20).

5. AREA E—COLD WATER SPORTS FISHERIES

a. Description
This area includes lakes and streams with physical, biological and chemical characteristics, critical to the survival of cold water fish species (i.e. lake trout, brook trout and rainbow trout).

b. Intent
This area will be managed to ensure the continued provision of high quality cold water fishing opportunities.

c. Management Strategy
- The district will maintain, and where possible enhance, the cold water fish habitat of the district (i.e. water quality, spawning areas and feeding areas); and
- Management efforts will be directed by the policies and general intent of the fisheries section (page 17).

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6. AREA F—WARM WATER SPORTS FISHERIES

a. Description
This area includes all lakes and streams supporting other than cold water fisheries.

b. Intent
This area will provide a diverse quality of fishing opportunities.

c. Management Strategy
- The district will manage these waterbodies to ensure the protection and enhancement of site specific critical fish habitat (e.g. spawning areas, nursery areas and feeding areas); and
- Management efforts will be directed by the policies and general intent of the fisheries section (page 17).

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7. AREA G—CANDIDATE PROVINCIAL PARKS

a. Description
Management Area G consists of the Kawartha Highlands candidate provincial park, located in part, in Cavendish Township.

b. Intent
The area will be managed to maintain the landscape and lakeshore environments in as natural and undisturbed state as possible, so that the potential of the area as a natural environment park is maintained.

c. Management Strategy

- The district will manage this area to protect and maintain the identified park values;
- A park master plan will be prepared to give specific direction to park development, maintenance and operation. In the meantime, management efforts will be directed by the policies and general intent of the provincial parks section (page 24), and the following:
  - no further commitments for timber extraction will be made;
  - existing commitments will be phased out;
  - aggregate extraction will not be permitted except as required for park development;
  - mineral exploration and extraction may be permitted under controlled conditions;
  - trapping may continue as an interim use of this area until park designation occurs;
  - fish and wildlife management may be permitted as appropriate;
  - the construction of roads will not be permitted except as required for park development purposes;
  - boating, swimming, picnicking, hiking, fishing and viewing will be permitted subject to the appropriate legislation; and
  - the disposition of land will not be permitted.

8. AREA H—AREAS OF NATURAL AND SCIENTIFIC INTEREST

a. Description and Intent

Nine sites which have geological features important for their educational and research values, have been identified. The district will seek appropriate protection of these sites.

b. Management Strategy

Most of these sites are located on lands owned by the various levels of government. In particular, six sites are located on lands managed by the Ministry of Transportation and Communications; one site by Parks Canada; and one site by the Municipality of Dysart et al. The ministry will attempt to protect and display these sites through cooperative agreements with these agencies. The sites are:

- Kirkfield Liftlock Area, Carden Township.
  This site represents the true sequence of the Bobcaygeon formation overlain by the Verulam foundation and underlain by the Gull River formation;
- Coboconk South Road Cut, Somerville Township.
  This site, located on Highway 35 is significant for its ordovician strategraphic representation in central Ontario;
- Shadow Lake Road Cut, Somerville Township.
  This site shows the contact between the Shadow Lake formation and the Gull River formation. It shows excellent exposures of the lower Gull River formation;
- Deer Bay Creek (Highway 36) Road Cut, Harvey Township.
  This site displays the Gull River formation in contact with the Precambrian bedrock;
- Monmouth Formation, Monmouth Township.
  This site consists of a number of outcrops along Highway 121. It is an example of the Monmouth formation of the Hermon Group;
- Silver Lake Road Cut, Galway Township.
  This site exposes rarely seen beds of the lower member of the Bobcaygeon formation;
- Tory Hill Formation, Monmouth Township.
  The site is comprised of a series of outcrops along Highway 121, north of Tory Hill;
- Haliburton Dry Wells, Dudley Township.
  This site contains three pronounced circular holes in granite bedrock, approximately two metres (six feet) in diameter and four metres (13 feet) deep. The ministry will encourage the protection of this site through negotiations with the Municipality of Dysart et al; and
- Coboconk East Quarry, Somerville Township.
  This privately owned quarry shows the contact between the upper Gull River formation and the lower Bobcaygeon formation. It is the best exposure of the lower Bobcaygeon formation. The ministry will attempt to protect and display this feature through agreement with the landowner.

9. AREA I—SEED ORCHARD

a. Description

This area consists of a seed orchard, located in Snowdon Township.

b. Intent

Management of this area will be directed toward protecting the site for its seed producing capabilities.

c. Management Strategy

- Management activities will ensure that the forestry objectives for this area are attained;
- Aggregate extraction will be permitted only where consistent with the forestry objective;
- Consideration will be given to the issuance of a licence of occupation to allow mineral exploration subject to specific terms and conditions; and
- The seed orchard will continue to provide opportunitles for some forms of recreation (e.g. hunting and viewing).

10. AREA J – RESOURCE MANAGEMENT CENTRE

a. Description

This area identifies the Leslie M. Frost Natural Resources Centre as a special management area. It includes portions of Sherborne, Hindon, Stanhope and Havelock Townships.

b. Intent

The Frost Centre was established by the ministry to increase public awareness of natural resources and their management. In addition to the broad program objectives of the ministry (land and water management, resource products, and outdoor recreation), three additional and distinctive objectives have been established for the Frost Centre. These objectives relate to education and demonstration; integrated resource management; and innovative and experimental resource management.

c. Management Strategy

- Management within this area will be undertaken in accordance with the Frost Centre's *Integrated Plan for Land Use and Resource Development*; and
- Management within this area will contribute to the achievement of the resource products and outdoor recreation targets for Minden District.

This section identifies how the district will apply the strategies identified in this report.

1. GENERAL

Through intensive management, emphasis on extension, assistance and public information programs, the district will be able to achieve the ministry targets in Minden District. This requires however, that all program activities be carried out in a manner which addresses the intent of these *Land Use Guidelines.*

The responsibility for the means to apply these *Land Use Guidelines* are identified throughout this document. To summarize, ministry objectives will be achieved in Minden District through:

- ministry program activities;
- extension and assistance programs for private land;
- input to and review of municipal official plans and zoning by-laws, and review of specific development proposals;
- adoption of a planning and project approvals procedure outlined below;
- specific conditions (e.g. guidelines for access roads and modified management areas). These may be incorporated in licences, permits, leases, etc. issued under provincial legislation (e.g. the *Public Lands Act, Mining Act, Crown Timber Act*);
- liaison and cooperation with other government ministries and agencies (e.g. the Ministries of Transportation and Communications, Environment, Tourism and Recreation, Citizenship and Culture, Municipal Affairs and Housing, and Conservation Authorities);
- resource inventory on both public and private land; and
- regular public consultation.

Management and operational plans are prepared to identify activities to be undertaken by the ministry or its agents. These provide more specific direction for management and the use of land and resources. Such plans will have due regard for the intent of this document. Existing management and operational plans which do not address the intent of these *Land Use Guidelines* will be appropriately amended.

As achievement of ministry objectives is dependent on the contribution of resources from private land, major efforts will be made to encourage wise management of these lands. This will include the provision of advice and assistance to private landowners regarding resource management; the establishment of formal agreements and arrangements for ministry management of private lands; and by working closely with municipalities, the conservation authority and other agencies, in matters related to land use planning and resource management. The ministry will specifically encourage, through the municipal planning process, designation of areas consistent with this document and necessary to ministry target achievement. Such resources include site classes 1, 2 and 3 tolerant hardwood and pine; important aggregate resources; and deer yards.

The ministry will continue to explore the possible use of incentives in resource management and will actively support incentive programs that contribute in a meaningful way to the achievement of the policies and the general spirit and intent of this document.

In addition, on all lands, the ministry's statutory authority will be used to promote the wise use and management of all resources in accordance with the policies and the general spirit and intent of these *Land Use Guidelines.*

Finally, contained within the boundaries of the Bracebridge and Minden Districts is the Leslie M. Frost Natural Resources Centre. The centre was established in 1974 as an outdoor education centre. One of the objectives for the Centre was "to develop and implement integrated natural resource planning and management". To assist in achieving this objective the centre prepared an *Integrated Plan for Land Use and Resource Development.*

The Frost Centre is identified as a general resource area in the *Minden District Land Use Guidelines*. Within this general resource area, the provisions of the Frost Centre plan will apply.

The plan for the Frost Centre, which was approved in 1980, will be applied in the same manner as the *Minden* and *Bracebridge District Land Use Guidelines*.

Where existing Crown land uses are not consistent with this document, and their continued existence is considered by the District Manager to adversely affect the achievement of program objectives and targets, consideration must be given to phasing out of the land use over an acceptable period of time, or relocating or reallocating the use to some other area.

2. CONSISTENCY WITH OTHER AGENCY PLANS

a. General Status of *Land Use Guidelines*
The *Land Use Guidelines* have no legal status. The control of land use on private land in municipalities is exercised by those municipalities and the Minister of Municipal Affairs and Housing under the authority of the *Planning Act*.

The ministry recognizes that private landowners, other government agencies, municipalities, conservation authorities, and interest groups are key partners in any effort to achieve effective and integrated resource management. The Ministry of Natural Resources will continue to work with these groups, especially with municipalities through the ministry's plan input and review program to ensure that resource values are considered in local planning documents.

b. Relationship with Municipalities
The *Minden District Land Use Guidelines* will serve as one of the sources of information for ministry involvement in municipal planning.

The ministry will consult with municipal officials and private landowners where the *Land Use Guidelines* indicate the ministry wishes to influence particular land uses on private land in organized municipalities. At this time the needs of other land uses will be taken into consideration.

There will be occasions when the ministry feels that certain land uses or proposed developments on private land, while in conformity with municipal planning documents, will have a negative impact on ministry programs or interests such as critical winter deer yards. In such situations the ministry will attempt to resolve the situation through discussions with the proponent, the municipality and the Ministry of Municipal Affairs and Housing.

In municipalities containing Crown land there may be situations where municipal planning documents do not permit land uses on Crown land indicated as preferred in the *Land Use Guidelines*. Where this happens, and it appears that a possible land use conflict might arise, the ministry will consider taking further action under the procedures provided for under the Planning Act.

c. Conservation Authorities
Conservation authorities are independent corporate agencies set up jointly, under the *Conservation Authorities Act*, by the local municipalities and the Province of Ontario to develop and implement water related management programs.

The *Conservation Authorities Act* is administered on behalf of the Province of Ontario by the Ministry of Natural Resources. The Kawartha Conservation Authority is the only one in Minden District.

The conservation authority is currently completing a watershed plan that will outline the long-term direction of all authority programs. The primary program of the conservation authority is flood and erosion control, which complements the ministry's programs. Other conservation authority programs, particularly those in forestry, fish, wildlife and recreation supplement the efforts of the ministry. Both agencies are making every effort to reduce duplication and overlap in their planning and ensure that the delivery of resource management programs achieves the greatest possible benefits to the people of Ontario.

d. Canada-Ontario Rideau-Trent-Severn Agreement Board
The governments of Canada and Ontario have approved a set of policies relating to the planning, development and management of one of Canada's prime recreational resources — the Rideau-Trent-Severn Corridor. The implementation and the attainment of the Canada-Ontario Rideau-Trent-Severn (CORTS) Agreement Board objectives is only possible through the cooperation of all interests in the corridor. The Ministry of Natural Resources is an active member of the CORTS Agreement Board and will be the lead ministry in implementing many of the approved policies. For other policies, it will provide support to agencies having lead responsibility. For the portion of the corridor located in the Minden District, these *Land Use Guidelines* propose land use activities

which comply with the CORTS policies. The district's review of other plans and development proposals within the corridor will consider the degree to which they support the approved CORTS policies.

e. Ontario Ministry of Agriculture and Food
The ministry recognizes the importance of agriculture. On private land, the ministry normally will not encourage or support activities or land uses which result in a long-term loss of the amount of land in agricultural production. The ministry will encourage forestry, recreation and other compatible uses on high capability land presently not in agricultural production.

Generally, on public land the ministry will maintain high capability agricultural land, or other sites as identified by the Ministry of Agriculture and Food, in uses which do not preclude the long-term use of these lands for agriculture, should agricultural use become necessary or desirable.

f. Ontario Ministry of the Environment
The Ministry of Natural Resources will work closely with the Ministry of the Environment in meeting the requirements of the *Environmental Assessment Act*, and will work closely with that ministry in monitoring impacts on the environment related to natural resources.

The two ministries have jointly developed guidelines in this regard, related to water quality and fisheries issues.

The Ministry of Natural Resources has responsibility for identifying the fisheries values of a lake with respect to meeting the Ontario Government's fisheries mandate. This identification is based on the *Land Use Guidelines* and, as developed, local fisheries management plans. The Ministry of the Environment is responsible for determining existing water quality and predicting the effects of proposed development on water quality. The latter information is used by the two ministries to assess potential effects on fisheries values.

g. Ontario Ministry of Citizenship and Culture
The ministry recognizes the importance of sites of historical or cultural significance. The ministry will work with the Ministry of Citizenship and Culture to identify known sites and to establish appropriate management prescriptions.

h. Ontario Ministry of Tourism and Recreation
The ministry recognizes the significant contribution of recreational and tourism pursuits to the social well-being of residents of the province. In fact, part of this ministry's outdoor recreation objective is to ensure a continuous contribution to our economy from tourism and to maintain the significant recreational values of the area.

The ministry will cooperate with and assist the Ministry of Tourism and Recreation and the tourist industry in encouraging tourism development where appropriate.

APPENDIX

A: highlights of the ministry's public consultation program

A public consultation program for the *Minden District Land Use Guidelines* was initiated early in the planning process to:

- collect and disseminate information;
- consult with and inform the general public;
- provide insight to ministry planning staff; and
- assist in plan implementation.

The basic consultation program began in January of 1980 when representatives from most government agencies were contacted.

In April of 1980, a letter was sent to all federal and provincial members of parliament, all municipalities, county governments, planning boards, and key special interest groups, informing them of the planning exercise. Meetings were held with these groups to further explain the exercise.

Throughout the following months, the district prepared for an open house to discuss the background information that had been collected. A brief summary of this information was prepared and circulated to all groups and individuals that had been contacted or had expressed interest in the program. The open house was held November 29, 1980. All responses were recorded and considered in the preparation of the draft *Land Use Strategy.*

The open house proved useful, not only in surveying public opinion, but also in identifying errors and gaps in the data base. This provided a better focus for the planning effort over the next two years.

In June, 1982, a draft *Minden District Land Use Strategy* was published. It was circulated shortly thereafter, to all federal and provincial members of parliament, municipalities, county governments, other government agencies, the conservation authority, key interest groups, and interested individuals. A tabloid, briefly summarizing the draft *Minden District Land Use Strategy* was also prepared and mailed to the residents of the district.

The draft *Land Use Strategy* was discussed at an open house held August 20th and 21st, 1982. All responses were recorded and considered in the preparation of the final report. The Minister personally reviewed the district summary and analysis of public comment and discussed the proposed *Land Use Strategy* with the District Manager.

TABLE A1 SUMMARY OF CONTACTS (to November 1, 1982)

TYPE OF CONTACT	NUMBER
Number of Background Information Open Houses	1
Attendance at Background Information Open House	63
Number of Draft Strategy Open Houses	2
Total Attendance at Draft Strategy Open Houses	210
Comment Sheets Distributed	200
Number of Draft Strategies Distributed	225
Number of Tabloids Distributed	6000
Meetings with Municipalities (including County Councils)	9
Meetings with Interest Groups	4
Interviews with the Media	7

TABLE A2 SUMMARY OF RESPONSES (to November 1, 1982)

Response \ Category of Respondent	Total	MP MLA	Municipality	Conservation Authority	Government Agency	Industry	Interest Group	Cottager Association	Private Individual
Input from General Correspondence	11		1		1	1	2		6
Input from Introductory Letter (April 1980)	30	1	10	1		1	1	16	
Input from meetings	13		9				4		
Input from background information open house	8		4					3	1
• comment sheet	3							2	1
• written brief	5		4					1	
Input from draft Land Use Strategy open house	53		8	1	8	4	9	3	20
• comment sheet	6		1						5
• written brief	47		7	1	8	4	9	3	15

Table A1 "Summary of Contacts" and Table A2 "Summary of Responses" provide a summary of the various methods of public contact used in Minden District, together with related dates, occurrences, and respondents.

Copies of all comments received by the District are available for viewing in the Minden District office, the ministry's main office public reading room and the Legislative Library at Queen's Park.

Backcountry Recreation
This includes canoe tripping and/or backpacking in remote areas accessible only on foot, or by manually powered watercraft.

Basal Area
The area of the cross section of a stem, usually of a tree at breast height.

Candidate Provincial Park
An area designated in ministry *Land Use Guidelines* which may be given official status as a park at some future date.

Canopy
The cover of branches and foliage formed by tree crowns.

Capability
The natural ability of an area to provide continuous opportunity for benefits under an assumed level of management.

Capacity
The upper limit to which an area of land, or water, may be used or developed without an undesirable change taking place in the environment. Also called carrying capacity.

Cold Water Habitat
Waterbodies having characteristics that support cold water fish species such as trout, whitefish, and cisco.

Crown Land
All land (including land under water) held by the province. The term refers to both land which has never been sold and land which has been re-acquired. In this report Crown land and public land are used synonymously.

Deer Yard
An area having available shelter and food, in which deer are usually found during the winter.

Earth Science Site
Public or private land where landforms of provincial significance have been identified.

Furbearers
Animals having commercially valuable pelts including beaver, mink, marten, otter, muskrat, fisher, fox, raccoon, wolf, and lynx.

Geological Environment
A discrete period of time characterized by distinctive geological and geomorphological processes, climatic conditions, and plant and animal life or its absence, which is represented by identifiable features on or below the earth's surface.

Goal
A general purpose to which the ministry aspires.

Habitat
The place or type of site where an animal or plant naturally or normally lives.

Hazard Lands
Lands which, because of their physical characteristics in combination with their location, present a risk for their occupants; including loss of life, property damage, and social disruption (e.g. flooding).

Historical Theme
A common activity or procedure involving a substantial portion of the contemporary population within a defined time span and geographic area.

Historical Theme Segment
A theme segment represents an important phase of a distinctive activity which took place in a specific time and place within Ontario.

Integrated Resource Management
The coordination of resource management programs to ensure that conflicts are minimized and that management which would benefit several programs is encouraged. Integrated management encourages multiple use, but recognizes that in some circumstances management of areas for a single purpose may be necessary.

Intolerant Hardwoods
Includes the following tree species: poplar and white birch. The term "intolerant" refers to the

sensitivity of these species to shade.

Land Use Guidelines
A document which displays direction concerning the use of land and water in a defined area. It identifies where and how the ministry intends to achieve its objectives in a specific district through the use of Crown land and through influencing the use of private land.

Land Use Planning
A process which culminates in a direction regarding the use of land.

Licence of Occupation
A licence giving permission to use and occupy public land for a specific purpose.

Life Science Site
Crown or private land where a natural habitat of provincial significance has been identified.

Management
The judicious use of means to achieve ends. Management may have various levels of intensity.

Management Plan
A detailed plan identifying how a resource is to be managed consisting of specific guidelines for the achievement of policies, targets, and objectives.

Mineral Aggregate
Composed of gravel, sand, stone.

Mining Rights
The right to work the ores and minerals on or under any land. These may be granted separately from surface rights.

Multiple Use
A resource management or planning concept applied to very large areas to indicate that all basic uses are accommodated. Typically, two or more uses may occur in the same general area at the same time or in sequence.

Natural Environment Park
An area incorporating outstanding recreational landscapes with representative natural features and historical resources, to provide high quality recreational and educational experiences.

Nature Reserve
An area selected to represent the distinctive natural habitats and landforms of the province, and protected for educational and research purposes to benefit present and future generations.

Net Merchantable Timber
The volume of wood remaining in a tree after deductions are made for tops, stumps and defect.

Objective
A quantifiable and attainable end which the ministry's efforts are intended to accomplish.

Occasion
A measure of actual recreational use describing the number of times a recreation resource or facility is used by individuals in a given time period. An occasion is considered not to exceed one day in duration.

Operational Plan
A part of a resource management plan stating the extent (including human and financial resources) of all work of any nature to be carried out during one or more years of the management period.

Opportunity
A measure of recreation supply which is used to describe the number of times a resource or facility can be used (occasions of use) in a given time period. An opportunity is considered not to be greater than one day.

Policy
A decision concerning the objectives to be achieved and the means of achieving them.

Production Forest Land
An area of productive forest land dedicated to the growing of merchantable timber or the production of other forest products.

Productive Forest Land
Land bearing or capable of bearing timber of merchantable character and not withdrawn from such use.

Recreation Park
An area which supports a wide variety of outdoor recreation opportunities for large numbers of people in attractive surroundings.

Resource
Any commodity that meets a need.

Resource Management
The control and coordination of the use of resources to achieve specific ends. Commonly applied in particular to natural resources.

Resource Management Plan
A plan by which the policies, objectives, and targets (usually of an individual program, except in the case of an integrated resource management plan) are implemented for a specific resource.

Saw Log
A log considered suitable in size and quality for producing sawn lumber.

Selection Harvest
The removal of mature trees, either as scattered individuals or in small groups, at relatively short intervals and repeated indefinitely. The objective is representation of all age-classes distributed throughout the stand.

Sequential Use
Where one use is followed by another in planned sequence (e.g. gravel extraction followed by residential development).

Shelterwood Cut
The removal of mature trees in a series of two or more cuts for the purpose of obtaining natural regeneration under the shelter of the trees that are left.

Short Log
A short length of sawn timber generally less than 1.8 metres (6 feet) long.

Site Class
A measure of relative productive capacity of a site for timber production.

Site District
A fairly large subdivision of a site region based on a characteristic pattern of climate and landform features.

Site Region
An area of land within which the response of vegetation to the features of landform follow a consistent pattern. Each specific type of land (defined in terms of relief, soil, texture, depth and drainage) within a specific site region has its characteristic plant succession.

Staking
Claiming a title or right to a parcel of Crown land by placing posts identifying a parcel of land for pursuing mineral exploration, to satisfy the legal requirements of the *Mining Act*.

Strategy
Planned actions or measures to achieve a desired end.

Surface Rights
All rights in land, other than mining rights, including sand and gravel deposits.

Target
A quantified end to be achieved or completed by a specific date.

Tolerant Hardwoods
Includes the following tree species: sugar maple, beech, basswood, yellow birch, red oak and white ash. The term "tolerant" refers to the ability of these species to tolerate moderate levels of shade.

Veneer Log
A log considered suitable in size and quality for producing veneer (a thin sheet of wood of uniform thickness).

Waterway Park
An area of outstanding recreational water routes with representative natural features and historical resources to provide high quality recreational and educational experiences.

Wetlands
Lands which are permanently or seasonally covered with shallow water and where distinctive soil conditions, plant and wildlife communities develop. These include wetland forests (swamps), wetland thickets, marshes, bogs and fens.

Wilderness Park
A substantial area where the forces of nature are permitted to function freely, and where visitors travel by non-mechanized means and experience solitude, challenge, and personal integration with nature.

Working Group
Tree stands having the same predominant species, and managed under the same rotation and broad silvicultural system.

Work Plan
A plan prepared annually which defines what management activities are to be undertaken for that year.

MAP 8

MINDEN DISTRICT GENERAL RESOURCE AREAS

M.N.R. Administrative District
County
Township
Community
Provincial Highways
Railways

5 0 5 10 15 20 Kilometres
5 0 5 10 15 Miles
1: 250000

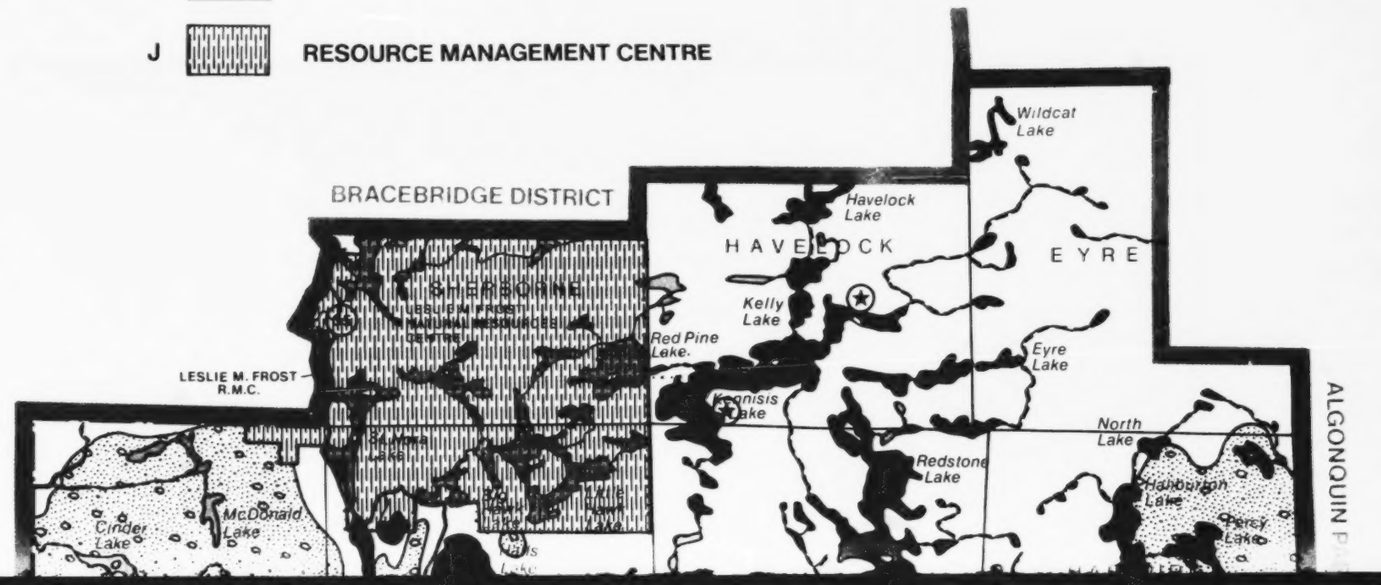
GENERAL RESOURCE AREAS

A MULTIPLE RESOURCE MANAGEMENT
B GENERAL RESOURCE MANAGEMENT
C WINTER DEER RANGE
D NESTING SITE

SPORTS FISHERIES:

E COLD WATER LAKE
COLD WATER STREAM
F WARM WATER LAKE
WARM WATER STREAM

G CANDIDATE PROVINCIAL PARK
H AREAS OF NATURAL & SCIENTIFIC INTEREST: EARTH SCIENCE
I SEED ORCHARD
J RESOURCE MANAGEMENT CENTRE



D NESTING SITE

SPORTS FISHERIES:

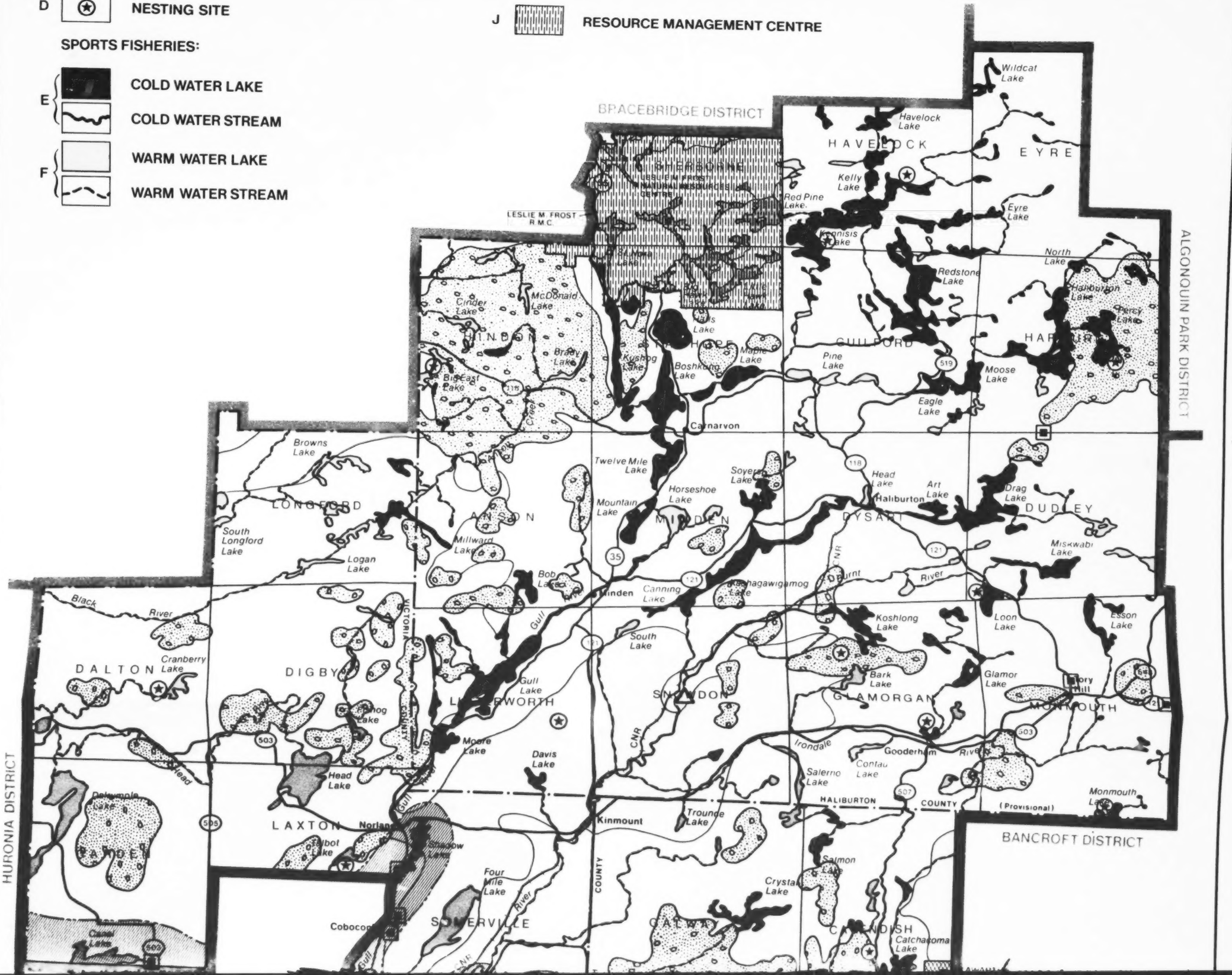
E COLD WATER LAKE

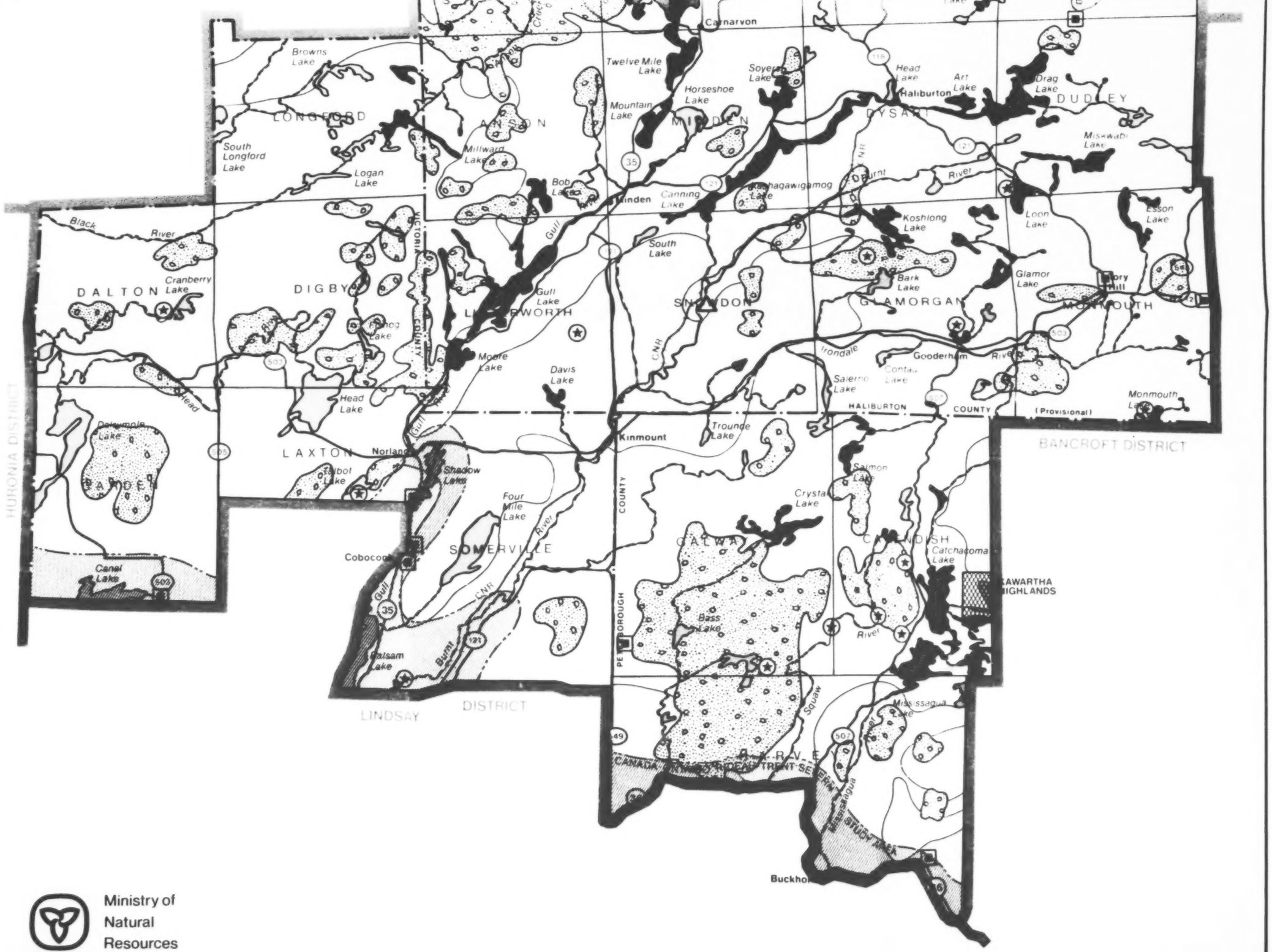
COLD WATER STREAM

F WARM WATER LAKE

WARM WATER STREAM

J RESOURCE MANAGEMENT CENTRE





Ministry of Natural Resources
Ontario

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